

Skill in short supply

Language, truth and Aretha Franklin... Peter Aspdon reports on a POP MUSIC seminar held recently at the University of Kent in which academic and aural fashions were paraded (page 14)

John O'Leary describes the spirit of optimism prevailing at the ESSEX Institute of Higher Education which has asked the National Advisory Body to sanction a 20 per cent growth (page 14)

Research and the real world: Olinga Ta'ed discusses the relative advantages of PhDs gained in INDUSTRY and of doctorates gained by conventional academic research (page 17)



J. A. S. Grenville reviews Martin Gilbert's account of the HOLOCAUST in a book that tries to provide through personal chronicles a moral record of the terrible experience of the Jewish people under Hitler (page 18)

The history of fundamental physics, spherical astronomy, algebra, kinetic theory, and entropy are among the subjects of new books in MATHEMATICS and PHYSICS (pages 23-27)

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For a generation or more the size and shape of higher education have been determined almost exclusively by the demand for places in universities, polytechnics and colleges from qualified applicants. Successive Governments have attempted indirect manpower planning by encouraging more young people to study science and technology, and direct manpower planning has been applied to the training of doctors and teachers. But there can be no doubt that informed, or uninformed, student choice has been the factor that has powered the post-war development of British higher education.

Student demand remains a powerful motor. The controversy that has surrounded rival projections of future demand and the arguments that have developed about maintaining access or protecting standards demonstrate this. Higher education, in particular the polytechnics and colleges, is still preoccupied by the problems of accommodating the present peak of student demand without sacrificing standards at a time when the available resources are shrinking. In the medium and long term higher education as a whole is preoccupied by the prospect of demographic decline and the rationalization or even contraction of the system that may be necessary. Both preoccupations arise from the great question of student demand, in the first case its assumed excess and the second its threatened insufficiency.

But a sea-change is coming over higher education. Very soon the "push" of student demand will be superseded or at any rate supplemented by the "pull" of manpower needs. Already the Institute of Manpower Studies at Sussex has produced clear evidence that higher education is in key areas. Both the scale and the increase of these shortages are likely to no longer be confined to the brave new world of information technology, where high tech companies are booming and busting at a break-neck pace, but will be apparent across wide areas of engineering and business and also in fast-growing professions like accountancy.

The low pay and status of teachers

and the demoralizing publicity surrounding the present dispute has produced an alarming collapse in the number of graduates enrolling on postgraduate certificates of education, which will inevitably lead to a chronic shortage of well-qualified school teachers. Candidates for the BED who wish to study physics or mathematics, subjects of acute shortage in schools, have become an endangered if not extinct species. The example of school teaching shows clearly that in the future manpower shortages will not be confined to new engineering fields on the advancing frontier of computer applications.

This should hardly cause any surprise to the politicians and planners. Four years ago the Universities Grants Committee, cut their student numbers in response to the cut in their recurrent grant. Today the inevitable outcome is whorls. But the figures for graduate unemployment show that the demand for graduates from industry and commerce has continued to grow at a healthy pace. In terms of manpower planning the university cut-back made no sense, however necessary it may have been to maintain academic standards.

The same cycle is about to be repeated in the polytechnics and colleges. To some extent the reduction in the output of university graduates that increased output from the polytechnics and colleges. But because no extra resources, or very few, were allocated to the latter, they too have become increasingly concerned about the possible threat to academic and professional standards. So now the National Advisory Body, like the UGC before it, has decided that enough is enough. The intake of students to polytechnics and colleges next year is to be cut, not by 18,000 as was originally feared but by between 5,000 and 9,000. The inevitable outcome will be an intensification of shortage of graduates across a wide range of subjects in the later 1980s.

The Government preoccupied by the question of student demand and its self-imposed duty to cut public expenditure has been mesmerized by the

apparent opportunity offered by demographic decline to reduce the size, and so the cost, of the higher education system. So ministers and their officials have been slow to notice this new and deadlier danger. They have recognized the existence of pockets of acute skill shortages but have been reluctant to accept that there may well be a general shortage of graduates in the 1990s. Reduction disguised as rationalization is still very much the reigning policy assumption in the Department of Education and Science.

This myopia is intensified by the DES's systematic dislike of manpower planning, outside teacher education and medical schools of course. Forecasting failures of the past are used to justify the department's reluctance to accept that the "pull" of manpower needs may have to override the "push" of student demand in shaping the future of higher education. Yet few people today argue that it is the duty of Government to draw up detailed manpower plans, although proper notice and action have to be taken about glaring skill shortages. What is expected from ministers is something much broader, a clear recognition that the demand for graduates is likely to take over from the pressure for student places as the most powerful motor of higher education development.

Ministers must then accept the implications of this new state of affairs. The most obvious is that the decline in the number of 18 year olds towards the end of the decade cannot be used to justify a reduction in the size of the higher education system. For their duty will be not to minimize student demand but to maximize graduate output. Higher education too must accept maybe equally unengaging implications. Entry standards will have to become more flexible, but without seriously compromising output standards. Course structures also will need to be adapted, to fit the course to the student not the student to the course. Continuing education will have to be developed much more systematically to make the "terminal" university a resource. In this revised context the further extension of higher education will no longer be just a soggy liberal necessity.

Culture goes to market

Entrance charges at Ely Cathedral and soon maybe at the Natural History Museum "voluntary" contributions extorted from visitors to the Victoria and Albert, Liverpool orchestras threatened with extinction, the prospect of advertising on the BBC - the cultural scene is very dark in this cold beginning of 1986. The sensation is of a phillistine frost as cold as the east wind that has frozen Britain for so many recent weeks. Although the present Government angrily denies the accusation that it is "anti-culture", only the most trusting optimists can readily accept ministers' good intentions when there is so much contrary evidence available in every day's newspaper.

Of course it is not all the fault of the Government. The Dean and Chapter at Ely are responsible for reverting to the doubtful medieval precedent of charging for spiritual services, and no previous Government has been willing to contemplate subsidizing the upkeep of cathedrals and churches. The trustees of the Victoria and Albert and the museum's director Sir Roy Strong are responsible for deciding to impose this iniquitous tax on cultural recreation, their insufficient grant from the Department of Education and Science left them with little choice. It is the Peacock committee that is contemplating the commercialization of the BBC, and some people no doubt would argue that in the era of *EastEnders* made out of defence of all these apparently phillistine policies. Few people today enter cathedrals to pray,

although their sense of aesthetic awe may steady them into religious experience. Museums inhabit the borderland between culture and tourism and it is common practice in most other countries to charge for admission. On the other hand well-managed and well-resourced museums to which entry is free could be regarded as a sound tourist industry, and there are still museum people who believe that understanding between the present and the past that cannot be expressed simply in terms of customer demand. As for the BBC there is something painfully old-fashioned about financing a complex public broadcasting system through licence fees. That may be OK for dogs, but for the BBC? Again however there are persuaders, not least the tawdry standards of most of the television.

Yet when all the excuses have been registered there is still something deeply depressing about the growing tendency to regard culture as just another tradable commodity. The Government although not of course directly responsible for these decisions is deeply implicated in establishing this and has set the ideological tone, and its testimony in public expenditure has left many organizations with no effective choice but to adopt an increasingly commercial approach.

There are two objections to this bleak trend. The first is that it is likely to lead to an impoverishment of our cultural traditions. The highest achievements of art have always depended on patronage, formerly the

private patronage of the rich and well-born and today the public patronage of the state. Without such patronage culture will dwindle. The second objection is that to regard culture simply as consumption rather than conservation, as a private matter rather than a public good, is to drain it of much of its most significant value to the individual. The best culture is about the continuity of our civilization in which our role is that of the trustee; it is also about the authentic expression of contemporary experience in which our role is that of the creator. In neither case can true culture be reduced to an external object that is bought and sold, although no sensible person would deny that the market had an important role to play in the creation and distribution of art.

The evil consequences of regarding culture as a commercial commodity spill over into education. Next to polytechnics and colleges in the present, which are regarded as a desirable but optional extra that temporarily cannot be afforded. But a similar view surfaces in the extraordinary discussion system that has taken place by proxy through leaks in the newspapers in silly froth - desperate attempts to place soon to be vacated by Sir Keith Rhodes Boyson into the hands of the equally desperate frustration of right-wing ideologues who are offended by the world's stubborn refusal to be changed by them.



Laurie To

Academics need to be assured that their work is valued.

Ms Julia Cope THES February 1986

Doctor Quintock - Derek, dear Derek - do come in off your feet. Thank you, Professor L...

No, don't sit there, Derek, take my seat. Good heavens, deserve a little comfort. Every day of the week that has a review article of the *British Journal of Studies*. Thank you.

That's it. Lean right back. do swivel around a bit if you like it. Thank you.

Well now, I expect you already had quite a day. I stand that your colleagues have been showing their respect for your achievement in the way?

Yes indeed. Several of them kind enough to ask me to sign their copy of the *Journal* and there was course, you very gratifying round of up when I went down to the morning college.

Good. That's what I like to see. And outside the department? Also very kind. The library generously invited me over to afternoon to run a short hour round the periodical collection.

Excellent. And some acknowledgement from the vicar?

Yes indeed. I missed it myself but I understand there was three-gun salute from the administrative block at about midday.

Only fitting. And the usual internal recognition? A telegram from Sir Keith.

Predictable, but still a pleasant touch. That was my feeling.

Well, Doctor Quintock - Dear my dear Derek - as your department, you'll realize the myself have to rely on formal, not to say traditional ways of recognizing achievement. Quite so.

So may I first of all shake your hand. Congratulations, Doctor.

Thank you, sir.

And now, if you'll be so good to pop into the secretary's office you should find something of a special by the filing cabinet. You mean...?

Quite so. Your very own brand new, bicycle.

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Religion's political come-back, 16

Tax breaks for donors

New measures allowing limited tax breaks for individuals and firms making donations of cash or equipment for higher education may be included in next week's Budget.

There has been continued pressure from MPs and industrialists for such a move, especially since the success of the "switch" initiative to boost engineering and technology. It is being claimed that the £25 million contribution of the private sector could have been much increased given the kind of tax concessions available in the United States.

Mr David Madel, chairman of the Conservative backbench education committee, put the case to the Treasury before last year's Budget. And he has had further talks on the subject with Treasury ministers during this year's consultations with senior Tory MPs.

The Chancellor, Mr Nigel Lawson, has always opposed such concessions because of his belief in fiscal neutrality, allowing the maximum scope for general reductions in taxation rates. But the Prime Minister's enthusiasm for the "switch", with its associated evidence of potential high private investment in education, may have encouraged a change of heart.

He is said to have been considering a system similar to that in the United States and Canada, where donations are tax deductible within set proportions of corporate or individual income. There universities receive millions of dollars each year from private sources.

ESRC offers research for free

by Olga Wojtas Scottish Correspondent

The Economic and Social Research Council is launching a special scheme to fund free research for business throughout Scotland.

Firms and other organizations will be able to tap the experience and expertise of academics in Scottish universities and colleges, with grants of up to £2,000 of research paid for through the ESRC's Open Door scheme.

The project coordinator, Mr Ray Kent of Stirling University's business studies department, is even now manning a hotline, 0786 79633, to match researchers to proposed projects. There is no limit to the number of schemes which the ESRC is prepared to finance, Mr Kent said. Any firm of any size can apply, as can other organizations such as trade unions or local authorities.

Bigger is better in NAB's new round of mergers

by John O'Leary and Karen Gold

A series of mergers but no major closures are being considered in officers' proposals for the National Advisory Body's planning exercise for 1987/88. The first stage of the exercise begins in earnest on April 4, when polytechnics and colleges will be sent detailed proposals for student numbers. But a late round of consultation by NAB officials has left a number of institutions apprehensive about the future.

Although no wholesale closures are being contemplated, several polytechnics and colleges are expecting course closures which would threaten the viability of large departments. And the damage is likely to be compounded by the teacher training plans expected shortly afterwards from the Department of Education and Science, which are likely to include at least five college or polytechnic department closures.

The NAB officers' proposals would accelerate the process begun in its last full planning exercise, of concentrating advanced courses into larger institutions. At least six mergers are under consideration to this end. Among them are the amalgamation of Ealing College of Higher Education with the West London Institute; West Midlands College of Higher Education with Wolverhampton Polytechnic; Westhill and Newman colleges with Birmingham Polytechnic; and the creation of an art institute in Kent incorporating Maidstone and Canterbury colleges of art and Medway College of Design.

Not all the mergers will be unexpected or unwelcome to the participants. The Ealing/West London liaison, for example, would increase the chances of a new polytechnic being designated in the capital, while Wolverhampton and West Midlands already have a joint allocation of teacher training places.

The Kent institute, too, would be welcomed by the county, as long as it did not lose too many places in its creation. Plans are already well advanced for the colleges to join in September 1987.

Many of the course closures will be bitterly resisted, however. Wolverhampton Polytechnic, for instance, is angry at suggestion that it should lose all its full-time engineering places, which underpin a large volume of part-time and short course provision. Middlesbrough Polytechnic has launched a public campaign in advance of official notification of the NAB plans to prevent the closure of its two design courses. At a press conference, Dr Michael Longfield, the director, claimed that the two degrees, in interior design and three-dimensional design, were the best in the country and promised "massive concerted opposition".

Mr Stuart Bell, MP for Middlesbrough, went further and claimed that each of the three north east polytechnics stood to lose a department in a combined cut of 1,000 students. He said he would raise the matter in Parliament and would be writing to Sir Keith Joseph, Secretary of State for Education and Science, to protest.

Elsewhere, Leeds Polytechnic stands to lose its town planning and fine arts degree courses and Sheffield Polytechnic would have to cut more than half its places in social and administrative studies, and almost half in business, management and accountancy.

The late round of consultation, undertaken after Sir Keith's indication that an extra £23 million might be added to the 1987/88 advanced further education pool, has caused some dissatisfaction because time did not permit all institutions to be included. Sheffield Polytechnic is just one of those which has registered its concern about the conduct of the exercise.



Normally unflappable Mrs Frances Morrell, leader of the Inner London Education Authority, was taken aback by a special Easter greeting when she visited the authority's hotel school at Westminster College. Trainee chef Angela Corbin, from Brixton popped out of a giant egg to celebrate the opening of the school's new £2.5 million kitchens.

Sir Keith gives vocational training priority

by Maggie Richards

Sir Keith Joseph admitted this week he had failed to pay sufficient attention to technical and vocational education during his early days at the Department of Education and Science.

The Secretary of State for Education, who was addressing a conference at the Commonwealth Institute in London, revealed that he had later come to realize the sphere was of "parallel importance" to issues in schools and higher education.

He went on to emphasize that a balance had to be achieved between the values of the broad liberal tradition on the one hand, and the tradition of useful education on the other.

From primary education through to universities, the importance of education for its own sake and as a preparation for life rather than work had been heavily stressed. "I do not deplore this tradition at all: it is vital for the preservation and

enrichment of our culture, and I am determined to make this sort of education, at the very highest standard, available to every single young person in this country. But I do deplore the one-sidedness and dominance of that tradition. It is this that we must all work to try to correct," Sir Keith said. Equally, there was within vocational education a danger of dividing the requirements of employers or the economy from the needs of the individual.

A rapidly changing society needed more than a narrowly skilled workforce; it demanded versatile people, capable of responding to change, with skills in personal relationships, problem solving, and the ability to continue their learning.

A free society also required people capable of contributing fully to both social and economic development. Technical and vocational education must, therefore, develop individuals as

DES veto delays race rules

by Patricia Santinelli

Guidance on multicultural education being prepared by the Council for National Academic Awards has not been published for over a year because the Department of Education and Science objects to the overuse of the word "anti-racist".

A decision on whether to publish the notes headed *Multicultural Education in Courses for the Initial Training and Inservice Development of Teachers*, now rests with Dr Edwin Kerr, the CNA's chief officer. Last Thursday, the council's initial teacher training committee voted unanimously for publication.

According to some members of the Committee for Teacher Education which drafted the notes, Mr David Love, the DES assessor on the committee originally objected to multicultural education being discussed at all, on the grounds that it was a professional rather than academic issue.

He subsequently objected to the word "anti-racist" which appeared 12 times in an initial draft. This has now been whittled down to four references, but it is understood the department still objects to publication on the grounds that the word might offend. The notes have in fact been developed by the CNA to be read in association with a discussion paper on multicultural education issued in 1984. Ironically the word "anti-racist" featured several times in this document.

The notes have come to Dr Kerr as chairman of the committee for academic and institutional policy, which has authority to decide whether policy statements should be issued. He confirmed that the DES had objected to the words "anti-racist" and said he had to be confident that his committee would want him to take chairman's action.

In particular Dr Kerr says he has to be careful that the document does not appear prescriptive, and lead institutions to believe that unless they adhere to the notes in the design of their courses, these will not be validated.

The actual notes, however, stress that they are not prescriptive "but seek only to put the onus on institutions to respond in ways consonant with their own policies through proper academic and professional practices".

The use of the word "anti-racist" seems to be fairly anodyne. For example in the section headed "Educational and Professional Considerations" it asks questions such as: "How can permeation of all elements of initial inservice courses with multicultural and anti-racist considerations, including attitudes, skills, and knowledge best be achieved?"

Intelligent contributions to society. "If we need, as we still do, a greater recognition of the realities of working life on the part of the education system, we also need a greater recognition on employers' part of their social responsibility to help develop all young people and all their talents, which is in their own long-term interest as much as in the interest of the young people themselves."

The link between vocational education and personal development, this partnership between educators and employers, is not a luxury for a rich country to indulge in; it is a necessity, for any society wishing to be healthy and prosperous," he declared.

Sir Keith stressed that employers had to play a major role in supporting technical and vocational education. Unless they demanded and were prepared to contribute to education and training, then government action would be of little value.



In October 1984 a conference was held at the Royal Society of Arts about the Future of the Railway Heritage, the account of which has just been circulated in the form of a handsome, informative and entertaining book which includes all the discussions and a good selection of photographs of what is after all one of the most entrancing collections of buildings in the country.

The Royal Society of Arts is very lively nowadays, playing an increasingly active part in current issues from Education to Industry. Its Journal provides some of the best reading you can get; and that included a good piece of the proceedings of the conference.

With fine timing the Railways Board announced the setting up of a £1 million fund for the Railway Heritage Trust. British Rail, seen not so long ago as one of the great wreckers of the inherited environment, was now able to insist on its devotion to its inheritance.

It is, of course, a frightening problem. In a chapter in an earlier book on *The Railway Heritage of Britain*, Bernard Kaukas, the environment director of British Rail, noted that "the cost of even partial restoration is astronomically high".

He called his chapter "The Splendours and Miseries of British Rail's Architectural Heritage", and I remember a conversation with him some years ago in which I appreciated for the first time the predicament of someone dedicated to the artefacts and trying to make of it all an economically convincing story.

In fact, the railway people have reacted to the changing taste of the century. When I was an architectural student we had at first nothing but contempt for St Pancras station; then we learned that Barlow's engine shed was good but Scott's main building was absurd; now we know that however good the shed, Scott's building is supreme. It once seemed large and vulgar; now I walk into it and find it almost dinky.

And many stations have been given a new life. York's was always grand, but the entrance and booking hall was tawdry; now it is a delight. So is Edinburgh's Waverley station. I have just travelled from one to the other and back again and rejoiced in having such a happy start and finish to the journey.

Waverley has the added improvement of having no barriers, so that you walk on and off the platforms, which merge with the concourse areas and give the whole place a colour and vitality that it didn't have. Huddersfield looks good from outside but there is still a lot to be done to make the whole building viable.

However good the stations, none can compare in grandeur with the great Victorian viaducts. On two pages of the book are photographs of the viaducts at Ribbleshead and Dent Head, Giffordham, Landerfoot and Chirk.

Sir Walter Scott thought the soaring aqueduct at Pont Cysyllte on the Llangollen Canal the greatest work of art he had ever seen. The train viaducts must run it a close second.

I think I have been over them all, once at terrifying speed at Giffordham where the curve is frightening enough slowly, and spent many hours, and days looking at Ribbleshead's. Its survival is of paramount architectural importance.

It seems that the Railways Board thinks so too.

Patrick Nuttgens

Letters to the editor

Should Jarratt ignore Oxbridge?

Sir, — One of the most interesting points in my old friend Geoffrey Lockwood's largely topographical account of the proceedings of the Jarratt committee (THES, February 28) is the sentence "It was quickly agreed that Cambridge and Oxford should be excluded from the sample

I hope it is not too simplistic a view to presume that the Jarratt inquiry was concerned in the end with achieving better universities. Now you will find few school persons or parents who do not believe that these two universities are the best we have — and certainly a lot of school persons in the private (ie public) sector firmly believe that they are the only "real" universities we have got.

Nor is the belief misplaced or misguided. If efficiency is to be judged by specific indices such as, for example, getting the right people into the right jobs, their results are quite startling. An examination of the Index of Ministers in Butler and Sloman's *British Political Facts 1900-1975* reveals that 1,401 people held ministerial office between those years. Of these 888 held a university education: 414 went to Oxford, 247 to Cambridge, 3 to both, 62 to London and 62 to Leeds (out of a total of 100 "other universities").

Or take the Anglican Church. Information supplied by the Crown Appointments Office about diocesan bishops currently in post reveals that 16 went to Oxford, 17 to Cambridge and 9 to others.

Other disciplines seem likely to provide similar if not identical results. Now it seems clear to me that such remarkable institutional success is something perhaps to be emulated, and certainly to be investigated. I am therefore unable to see why it was lightly dismissed. Any possible reply

would be received with considerable interest by
Yours faithfully,
J. J. WALSH,
Registrar,
University of Leeds.

Sir, — Whether general management at Jarratt is a good solution to the problems of university organization and how it can be squared with democratic traditions are major issues for debate. "Retreat From Rambo" your editorial on these matters (THES, February 28), was, however, both inaccurate and, as so often in trade magazines, self-serving.

Take, for instance, your analogy with the recent introduction of general management into the NHS. Griffiths (as the NHS Jarratt is known) makes an interesting parallel — but to speak of its "indifferent benefits" is absurd. Griffiths is still in the process of being introduced. It is only now, for example, that general managers are being appointed at "sub-unit level", or, to put it more familiarly, into wards, theatres, out-patients, etc. What is long-term effects will be, for the moment, an open question.

Or, take another of your arguments — that universities, like health services, "must be managed in harmony with the professional culture." This seems fair enough. But what if the professional culture is elitist and unpleasantly self-regarding — something that is often alleged of doctors. Or even, just as bad, what if the notion of a single professional culture proves seriously misleading. Modern medicine is fragmented into an extraordinary number of specialisms — and so too is academia: specialisms which each fight fiercely for their independence.

Sometimes "professional culture", like "clinical freedom" can simply

mean the right to tell the rest of the world to go to hell — a right that always needs exercising with care.

In short, if Jarratt is Rambo, you sir, are The Last of the Mohicans.

Yours sincerely,
P. M. STRONG,
84 Ferry Road,
Marston,
Oxford.

Sir, — I have to take issue with the views in your editorial that the Jarratt committee did not give serious consideration to the "civil service" model, and that, had it done so, its conclusions would have been significantly different. Most members of the committee had spent most of their professional lives working in the "civil service" rather than the "industrial" model, and the committee (and the report) assumed the existence of a cadre of administrators providing "the managerial backbone while 'preserving a professional neutrality' in support of the agencies of university government. That assumption underlies the report, indeed in an earlier editorial the report was termed "an administrative character", a description which I would not argue with.

A more pertinent issue, rather than the "civil service v industrial" one, is that of the dynamic nature of university government. The characteristics which you ascribe to the "old pattern", in terms of relations between senates and councils, the roles of vice chancellors etc relate in fact only to the history of the past 20 years, whereas the few Jarratt recommendations on governance conform to a much longer tradition.

Yours
DR G. LOCKWOOD,
Registrar and Secretary,
University of Sussex.

Archaeology and racism

Sir, — In your clear-headed and well-lanced editorial (THES, February 28) concerning the World Archaeology Congress at Southampton in September you ask both to support the ban (however phrased) and those who oppose it (vehemently) hard questions. "Why, why is it in an immoral of itself, among the nations' world?"

My answer to that question is South Africa, and in no other part of the world, a majority of the state have no vote and no educational, economic and social rights, on grounds of race by the law of their land. It is institutionalized in the Republic of South Africa.

The white minority are responsible for this state of affairs, regardless of the fact that some of them are their best to change the situation within. In a democracy, one election is over, the government represents the people. While the Africans cannot escape the fact that the present government is a racist one (it certainly does not represent the black majority) and they, rest of us, must live with the consequences of their own government's actions. Only in this way are we spurred to bring about social change through the ballot box.

There may indeed be injustice some of the 26 South African archaeologists denied access to the World Archaeology Congress in London. This is a small price to pay for the benefits to archaeology and the attendance of many hundreds of participants, particularly those of Third World, who otherwise could have come.

Yours faithfully,
M. H. DAY,
Chairman of the executive committee,
World Archaeology Congress,
Southampton 1986.

Council duty

Sir, — The logic of what Sir Nuttgens, the unhappy ex-director of Leeds Polytechnic, has to say to certain members of Leeds Education Authority (THES, February 28) is clear. It is that elected members best kept away from their statutory service as much as possible, leaving paid administrators to run it as they fit.

Dr Nuttgens' views clearly contradict all the major reports on government over the past two decades. From the 1970 Royal Commission onwards, they suggest that members with major responsibilities for local government should have the financial support to fulfil their role. Layfield would argue, for example, that the chairs of major universities be paid enhanced allowances to help to undertake their duties on a full-time basis.

There is no serious political threat what Patrick Nuttgens has done other than his ill-concealed attempt to discredit those who are elected to responsibility for local services. Yours faithfully,
GEOFF DRIVER,
Chair, education committee,
Leeds City Council.

Any ideas?

Sir, — We have established a working party at Hatfield whose object is to promote a climate of innovation in polytechnic notwithstanding the fact that polytechnic innovation is not related to quality but also to economic efficiency. Our first task is to establish the academic community of the United Kingdom is currently engaged in a way of interesting innovations.

We should be delighted to hear from THES readers about successful innovations they have associated with over the past few years, and will be happy to be cleared house.

Yours faithfully,
PETER CASEY, DAVID JACOBSON,
Hatfield Polytechnic.

'New blood' scheme 'unfair to women'

by Felicity Jones
and Owen Surridge

The age bar of 35 imposed on the universities' "new blood" scheme discriminated against women because this is the peak time for bringing up children, an industrial tribunal was told this week.

Dr Felicia Huppert, a Cambridge University psychiatric researcher was appointed to a "new blood" post in the University Grants Committee refused to endorse the appointment because at 39 she was too old. The bar could only be waived in special cases.

Dr Huppert has brought a case under the Sex Discrimination Act against Cambridge University and the UGC. The UGC is named because it laid down the rules for the scheme. The vacancy has been left unfilled pending the outcome of the case.

Dr Huppert told the tribunal that more women than men are appointed to lectureships over the age of 35 and the activities of women generally with higher degrees is lowest at that age because they have delayed starting

families until their thirties.

She told the tribunal "to gain experience the three areas of psychiatry, epidemiology and the use of computer methods of testing would have taken anyone a long time".

She described how she married after obtaining an honours degree at Sydney and went with her husband to California to begin a PhD. After two years her husband was awarded a fellowship at Cambridge and she started her postgraduate work again from scratch in England.

She applied for several jobs and was shortlisted but was unsuccessful. "I think that a woman who is around teaching is often overlooked for permanent jobs because they know that she will be around anyway," she said.

She was invited to apply for two lectureships outside Cambridge but already had a first child and was opposed to commuting.

"I run the home and have a major responsibility to child care which amounts to another full-time job which reduces the time and energy for academic pursuits without commuting

in addition.

"The age of 35 is the peak time for academic women to bring up their children. I felt this should be taken into account and if it were unrecognized that women do all these extra things this was unfair," she said.

She was encouraged to challenge the UGC when she discovered that a 41-year-old man in Oxford in her husband's field had been awarded a "new blood" post.

A former Association of University Teachers assistant general secretary, Ms Tina Day, carried out a statistical survey of the appointments to "new blood" posts.

She found that the total number of women appointed to non-clinical medical and allied subjects was usually 30 per cent whereas it had been only 6 per cent under the "new blood" scheme.

She also discovered that normally 30 per cent of women so appointed were aged 36 and over set against only 10 per cent of men.

Ms Day, claimed the age of 35 was particularly difficult for married women returners because that was the

age by which academics are expected to have achieved lectureship. "If they have not achieved lectureship by then it must be because they are felt to be unsuitable and they will not have a full academic career," said Ms Day.

As far as the "new blood" scheme was concerned she claimed that 35 was the worst possible age for an age bar. The odds are already stacked against the older person anyway but it bears particularly heavily on women.

Professor Sir David Phillips, chairman of the Advisory Board for the Research Council at Oxford University, giving evidence for the UGC said the "new blood" scheme was set up to overcome a preponderance of middle-aged academics who blocked the path to promotion and the recruitment of young researchers.

He said somebody whose career had been interrupted between the ages of 28 and 33 would be less vital than somebody who had carried straight on.

They were more likely to be out of touch with developments. The case continues.

Ten paired off for management tests

by Karen Gold

Four polytechnics and six colleges are to be scrutinized by teams of management consultants in the first phase of the National Advisory Body's Government-funded "good management practice" exercise.

All the institutions selected by the working party for the NAB exercise — the successor to the universities' Jarratt exercise — are in matched pairs.

They are: Middlesex and North Essex Polytechnics; Sheffield City and Leicester Polytechnics; Bolton Institute and Derbyshire College of Higher Education; Southampton and South Glamorgan Institutes of Higher Education; and two voluntary colleges, St Martin's, Lancaster, and the College of Ripon and York St John.

Each pair was chosen because they were similar on most counts — profile of work, for example — but different in one particular aspect, such as unit cost or staff-student ratio, according to NAB security Mr John Bevan.

Four management consultancy firms have been appointed to carry out preliminary studies on the pairs by mid-April.

They are Arthur Young (for the four polytechnics); Hay-MSL, Spicer and Pegler, and Coopers and Lybrand. The firms tendered for the preliminary investigations, which are intended to be a quick overall look at the main issue in the colleges' internal management, and will have to tender again for the further detailed studies, likely to take place in the summer term.

The NAB is expected to complete the whole review by the end of the year, although the group appointed to look at the relationship between colleges and their local authorities — another area specified for scrutiny by the Government — has not yet started work because, according to Mr Bevan, it cannot negotiate secondment for local education authority treasurer's official to represent local authority finance on the group.

Pleas meet with cool response

by Peter Aspden

Academics representing both the humanities and the sciences have had little joy in their latest meetings with the Secretary of State for Education, Sir Keith Joseph.

Members of the Historical Association met Sir Keith earlier this week for a "no holds barred, off the record" discussion of the historians' response to the Green Paper.

Although details of the meeting are being treated as confidential, the association president, Professor Donald Read, revealed that Sir Keith had not come out with any great revelations, and "said nothing which would surprise anyone".

Sir Keith also painted a picture of gloom and despondency when he

addressed a seminar of scientists at Oxford University, organized by the university's physical chemistry department.

He declined to give any future funding guarantees and stressed that scientists should concentrate on the two key themes of selectivity and differentials.

But the Oxford physiologist, Professor David Noble — a prime mover in the Science Education campaign — said after the meeting that he detected a ray of hope in Sir Keith's response to some of the questions posed by his audience.

Professor Noble himself had pointed out to the Secretary of State that the lack of any long-term policy statement from the Government could only accelerate the brain-drain effect by undermining the confidence of British scientists.

Poly staff lose faith in transfer

Staff at Paddington College, London, want the transfer of their department to a polytechnic to be postponed, because they say they have lost confidence in the polytechnic management's ability to make the transfer work.

The department of biological sciences, known nationally for its medical technician training, was due to be moved to the Polytechnic of Central London.

Financing and the final stages of the move due this September, were to be approved by an ILEA subcommittee but were withdrawn from the agenda after Paddington staff expressed fears about PCL's commitment.

They claim that accommodation and equipment are not ready at PCL and there is no guarantee that the facilities will be up to the standard of existing ones.

The college branch of the lecturers' union, the National Association of Teachers in Further and Higher Education, has passed a motion calling for the transfer to be postponed. A second motion said: "This branch has lost faith in the competence and integrity of the PCL management to effectively organize a transfer of the biological sciences department to PCL in September 1986."

The rector of PCL, Professor Terence Burlin said that the polytechnic had put no enormous amount of work into preparing for the transfer of Paddington courses, and that classrooms needed for the courses had been finished on time.

The second phase of building work for the courses was for laboratories and these could not be started until ILEA funding was approved. "PCL is committed to these courses, and the staff will be treated in the same way as all the rest of the staff of the polytechnic," he said.

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Showing a leg in Leicester: the city's Loseby Gallery currently houses an exhibition of work by Leicester Polytechnic's second-year fine art students, including this painting "Sorry, no women allowed in this bar" by Joanne Ashwell.



Dundee firm on pay cut

Dundee University court has refused to rescind its decision to make an above-average salary deduction from staff who took part in the Association of University Teachers' day of action in January.

The majority on universities have deducted £265, but Dundee has deducted £265, excluding weekends from the working year. The court this week agreed that this was "appropriate and equitable for all categories of staff," but donated the difference between the two deductions to a student hardship fund.

Mr Robert Seaton, the university secretary, said the court also decided to invite the unions to discuss the future calculation of a day's pay, and on the availability of staff to carry out university duties under their terms of employment.

Employers anxious to speed conditions talks

Local authority employers fear that talks on changes in lecturers conditions are slipping behind schedule and are anxious to speed up the process.

Some are said to be talking privately of tearing up the so-called Grey Book which consolidates conditions of service agreement stretching back to the mid-1970s and starting from scratch.

But they are in the minority, with most keen to negotiate on the basis of existing agreements to achieve the aims they have identified and want to implement from September 1.

Officials from both sides, together with a number of local authority officers and union observers, are to hold what could be a crunch meeting for the progress of the structure proposals at a remote farmhouse hotel in the Welsh Border country next week. A management official said: "We

Dangers in mergers

Mergers between universities and polytechnics and other transboundary initiatives are taking place in a potentially dangerous policy vacuum, according to the college lecturers' union.

The National Association of Teachers in Further and Higher Education, in a booklet published today, calls instead for a positive transboundary policy.

It wants to see a break with recent developments, which, it says, are taking place against a Government policy background of contraction with rationalization rather than expansion of educational opportunity the paramount object.

Across the Blythe Divide, published by Nafhe, Hamilton House, Mableton Place London WC1H 9BH.



Waiving the AUT flag

Last autumn, the Association of University Teachers took the unusual step of buying a half-page display in *The Times*. The subject of the advertisement was the problems affecting contract research workers in universities and the need for such staff to take part in effective trade union agitation.

Some will say it is inevitable that a trade union thinks the only way to overcome a problem is to organize. Perhaps it does carry with it a little of the thread of the advertising society we live in, or to put it another way, it is like Eddie Shah saying we all need a copy of his *Today*.

But the AUT, from any objective test, can claim a great many achievements on behalf of contract research staff.

There can be few negotiating tables in universities up and down the land which have not been stirred by reference to the AUT's Walver Clause Pack, and who ever heard of contract research staff issues being debated in senates and councils before the AUT came along?

For the uninitiated, at stake was whether basic employment conditions which all those in permanent employment take for granted, should be given to contract research staff. Now, over 20 institutions have abolished the use of waiver clauses applying to redundancy payments and others are still in negotiation with their AUT local association.

The campaign to win contract research staff a better deal is now entering a crucial period, particularly as a general election is probably not more than 18 months away. The first aspect of the campaign concerns discussions the TUC is having with the Labour Party about industrial relations legislation.

On March 19, the TUC is holding a consultative conference, specifically designed to ask all affiliated unions for views on what should form the basis of such legislation. While it is inevitable that there will be considerable discussion about recent major industrial conflicts, including the present *Times* dispute, the AUT will be seeking to make a major contribution in the debate on individual employment rights.

At the conference, the AUT will seek to scrap the waiver clause system, so that claims for unfair dismissal can be made by contract research staff.

It will also be pressing for a more comprehensive form of redundancy pay than allowed by the state.

Many discussions have also taken place between AUT local associations and university managements about the organization of contract research.

We are conscious that an increasing number of MPs are becoming agitated by the inefficiencies in this area. Little publicity has been given to one important statement made in the recent Labour Party document, *Education Throughout Life*.

It states: "The morale of our research workers has been undermined through lack of support, poor status and insecurity. Yet these staff are employed on valuable research projects such as cancer research, computer design and biotechnology, which is vital to this country's competitive position as a trading nation".

The message is that research staff have to be treated as professionals, with attendant status, salary and job security. This recognition is important because the real lobbying and discussions with MPs is only just beginning.

John Akker

The author is deputy general secretary, AUT.

Limits on tenure 'will torpedo promotions'

by David Jobbins

Planned limits on tenure may damp down demand for promotion precisely when many academics are considered worthy of it, according to the university lecturers' union.

In their appeal to ministers to withdraw their proposals to legislate on tenure, the Association of University Teachers claims the aim is to make the rapid contraction of universities easier and warns of further damage to staff morale.

They will be a "severe" impediment to universities' ability to fit higher education to the needs of the 21st

century, the AUT says. In addition to its academic freedom arguments against the proposals, the AUT emphasizes the effect on promotions and suggests that it may conflict with the undertaking not to interfere with existing contractual rights.

The quota known as the senior/junior ratio means that about 40 per cent of academics are at the top of the lecturer scale with little chance of promotion.

But, the AUT says, it is widely recognized that large numbers warrant promotion and are worthy of it. "Should the proposed changes be

introduced, and should promotion prospects suddenly improve those deemed worthy of promotion, the brightest and best, would be 'rewarded' by promotion into insecurity, and like their newly appointed colleagues, would join the ranks of the second class.

"The cynic might conclude that such a proposal was expressly made to damp down the demand for promotion at a time when it is otherwise growing embarrassingly strong."

The union, which has 33,000 members, says that while it would be indefensible to interfere with existing

contractual rights, the proposals would be a restriction on grades of employment.

In their submission, which is not publishing, the CNU ministers they are concerned.

They want an assumed statutory commission to be restricted to tenure, and not be able to propose changes of parts of statutes and charters.

Like the AUT, they are about how the proposals will

Major economic role for polytechnics

by Maggie Richards

Polytechnics must make a major contribution towards the economic regeneration of their regions, especially through a strong commitment to continuing education.

That was the message delivered by Mr Michael Harrison, Wolverhampton Polytechnic's director, to delegates gathered at a conference in Cardiff last week to discuss the challenge posed to public sector higher education by unemployment.

He argued that a large number of local authorities, particularly in inner city areas, were now adopting positive economic strategies in an attempt to regenerate their regions. Polytechnics as local and regional institutions were uniquely placed to assist these efforts.

By playing a major role in gathering and collating information, polytechnics could aid in plotting a general strategy for recovery. By participating in such action, polytechnics would also secure a continuing function in the plan that emerged.

The credibility of higher education

institutions had been eroded since the 1960s, when it was assumed that merely expanding the education system to produce more technologists would result in economic growth.

"If we are to regenerate ourselves as a credible political force, it is my belief we should attempt to integrate ourselves into local strategies," Mr Harrison told delegates to the conference, organized by the Polytechnic Association for Continuing Education.

He viewed continuing education as a major component in the strategic planning of regeneration, but the pattern of provision would vary, dependent on local conditions. Polytechnics would also have to recognize that in order to make a serious continuing education contribution, full-time provision would need to undergo radical reform.

The conference is to be followed by a workshop on unemployment to be staged at Wolverhampton Polytechnic next Thursday. Members of PACE will be examining ways of using the association's resources to further promote work for and with unemployed people.



Wish you were here: students from the food and fashion department Brunel Technical College, Bristol, in their annual week's work take-over of all hotel services at the Carnarvon Arms Hotel, Somerset.

Streamline vocational system, say directors

Immediate action to streamline the vocational qualifications system had been demanded by the Institute of Directors.

In a submission to the Manpower Services Commission working group currently conducting a study of vocational qualifications, the institute condemns the present variety of validating agencies as "unintelligible to both employers and the hundreds of thousands of young people who seek qualifications every year."

Advocating the creation of a central vocational council to oversee the award of a new certificate of vocational education the institute reports says: "There is no coherent, national system of vocational training which enables employers and education and training bodies to identify easily the status of any particular qualification as against another, or enables students to choose

courses of study confident that their achievements will be recognized with a properly validated, flexible system of qualifications." Under a central council, institutions would continue to offer their own syllabuses, subject to new national criteria, leading to the award of the new certificate. The council would set the criteria, supervise validation, and establish the merit of each course as a contribution towards the new certificate.

Members of the central council would be selected for their practical knowledge - not as representatives for various factions.

"It would be natural for employers, as the main consumers of vocational education, to be closely involved, and there will be a need for an input from the providers, those responsible for devising and teaching the courses."

Warning on sciences

The House of Lords select committee on science and technology was warned last week about the serious neglect of equipment in science and engineering research establishments.

In its evidence to the committee, the Science and Engineering Research Council said £100 million should be spent replacing obsolescent equipment.

Mr Bill Mitchell, the SERC chairman, said that the level of neglect was frightening and required spending £10 million immediately. "There is a case for some portion of the equipment fund of the UGC being channelled

through the research councils."

He did not think that serious damage had been done to engineering research as a result of the squeeze on its resources. "But morale in science is lower," he said.

The SERC favours a minister for science at Cabinet level, similar to France and Germany, as a means of getting higher priority.

The council would resist the setting up of an engineering industrial board to link research with industry and would prefer to appoint an industrial director to the SERC.

Economics blindspot in young

Young people leave school with ideas of how the British economy works, or how to organize their financial affairs, a team of economists at Manchester University says.

They have just completed a project on economic literacy which found that just 2 per cent of 16-year-old school leavers had had formal contact with economic education.

The result was that they had little awareness or interest of economic matters or even issues which might affect them personally. The team devised a new course of economic literacy aimed at improving economic literacy rate.

One of the group, Mr David Williams, said teaching would concentrate on young people's role in the economy as consumers, producers and investors introducing them to a wide range of economic concepts.

The different courses could be taught across the curriculum, in conjunction with existing economic and business studies courses, or in the humanities. Mr Raymond Rip, senior lecturer in the university education department, said it was to remove economics from its "derelict" position.

By combating economic illiteracy the public would have a greater understanding of how many forces in society work.

The Manchester project, sponsored by The Economics Association, started 10 years ago in response to a call from Government ministers to increase economic literacy.

College, Wales, have now adopted the scheme.

"We believe it will be possible to assess the impact on the education system and on the development of fresh attitudes to small business," Mr Williams said.

Role of science in an unfriendly world

by Karen Gold

Conflict between scientists and the authorities has lasted from Galileo to Sakharov, says a new book on the politics of science sponsored by the Airey Neave Memorial Trust. The book commemorating the MP and war hero who was assassinated at the House of Commons, was launched by the Prime Minister - a close friend of Mr Neave - last week.

The World of Science and the Rule of Law covers the role and treatment of scientists under the law in 35 countries, all signatories of the 1975 Helsinki agreement on human rights. Its authors cut across both fields: Professor John Ziman, chairman of the Council for Science and Society and former professor of theoretical physics at Bristol University; Professor John Humphrey, emeritus professor of immunology at the Royal Postgraduate Medical School; and Paul Sieghart, international lawyer and chairman of the British section of the International Committee of Jurists.

Its argument is based on the idea of the existence of a transnational community of scientists: a community which is kept in check by communal criticism of its own work and an

"organized scepticism" on freely flowing scientific information.

"The effective existence of transnational science depends on scientists being free to play their part as individuals, and not simply as state functionaries or as employees of commercial corporations," it says.

Yet science and technology are respected in the Helsinki countries - which include the two super-powers but exclude other major scientific countries such as India and Japan - and are lavishly supported by governments and private corporations. Pressures on scientists towards intellectual conformity with the state is undoubtedly less severe than that affecting scholars in the humanities and social sciences, and creative artists, the book says.

Despite the fact that in eastern bloc countries all scientists are state employees and in the west a significant number (perhaps 30 per cent) are involved in government contracts, with others under commercial restrictions, normal scientific work seldom involves scientists individually in politically sensitive issues.

Most scientists in most countries, the authors say, "simply accept and conform to the political and social conditions under which they live, and

try to get on with their research. Their discontents are directed primarily at practical deficiencies in the research environment."

Scientists have been more concerned with the social implications of their work lately, they argue. But their main clash with the state comes when their lives as citizens of the "one state" of science clashed with national interests.

The book lists seven areas of human rights in which scientists are vulnerable. Scientists are not an elite community despising more human rights than other groups, but they are vulnerable in that even apparently minor restraints - such as not being able to enter a particular country for a conference, a right not included in the Helsinki agreement - may prejudice their professional development, while their high status may make them liable to more repressive action if they question or dissent from established policy.

The areas listed are access to education and training - nepotism and United States, quotas for Jews and ideological restrictions in the eastern bloc are examples; work and choice of work; communication - including re-

ceipt of journals, letters and meetings all of which may be restricted; freedom of opinion and expression; freedom of movement including emigration; freedom of assembly and association; and respect for a scientist's personal reputation, honour, and intellectual achievement in areas such as election to a national academy or rights to intellectual property.

The book traces where such rights are denied or ignored. Neither east nor west, capitalism nor communism has a monopoly on human rights for scientists, it argues; the worst offenders in the Helsinki group are the communist countries, but among non-signatories are "capitalist" ones such as South Africa and Chile.

Scientists can support each other's human rights by monitoring breaches and sustaining each other, but decisions on whether to campaign publicly and politically have to be taken by individuals and in individual circumstances, the book says. Organizations such as academics can help, and there are associations which cross the east-west divide - the Pugwash continuing conference on science and world affairs, and the International Physicians for the Prevention of Nuclear War - in dealing with science and



Andrei Sakharov: conflict resolved.

politics, but the recent furor over the latter's receipt of the Nobel Peace prize specifically because of its low-key approach to human rights shows how vulnerable such attempts are. *"The World of Science and the Rule of Law"*, by John Ziman, Paul Sieghart and John Humphrey, £19.50 from Oxford University Press.

Holder of fourteen hot babies ...

by Peter Aspdren

It is not only cricket-lovers who have recently learnt to appreciate that one West Indian island can be a million miles away, politically and culturally, from its Caribbean neighbour.

As England's beleaguered team has discovered, the laid back good humour of St Vincent bears little resemblance to the political militancy of Trinidad and the fierce religious fervour of Jamaica.

To Dr Aston Preston, vice chancellor of the University of the West Indies, the rich diversity of the 14 independent governments with which he has to deal gives his job an invigorating dimension.

"If quarrels didn't exist we would have had to invent them - we are a contentious, even cantankerous people," he said during his visit to London last week. "But we also have the capacity for compromise."

Dr Preston has spearheaded the university's recent efforts to become more responsive to the different and sometimes conflicting needs of the 14 countries. Restructuring has involved a complex shuffling of university bodies on the three campus sites in Trinidad, Jamaica and Barbados as well as creating centralized bodies to oversee their efforts - "volunteering while decentralizing", as he puts it.

Although Dr Preston has been vice chancellor at UWI for the past 12 years, the restructuring provides him with one of his greatest challenges. His highly unusual background has prepared him perfectly for the fine detail of administration - he started at the university in 1951 as a senior working clerk, at the same time becoming privately for an external London University LLB degree, and became something of a specialist in university finance.

He was visiting London to open an exhibition on the university's work at



The Commonwealth Institute, as part of "Caribbean Focus", a nine-month programme of cultural and educational events organized by the Institute.

"The UWI has been accused of providing the region with more radicals per square inch than is reasonable, as well as many with the revolutionary spirit. It is a price of education anywhere, and I would have been surprised if the Caribbean students at UWI responded otherwise."

But, he added, the faculty had also turned out more technocrats, executives and managers to run the countries' economies than "guerrillas" manning the barricades on "street". Jamaican-born, he observes that his homeland used to be known as "the hottest baby to hold" in the 19th century. "In the latter half of the 20th, he adds wryly, "all fourteen territories are hot ..."

Big rise in arts fees hits overseas students

by David Jobbins

Overseas students on arts courses face higher fees in polytechnics and colleges next year than in universities, but science subjects are to remain comparatively priced despite a 7 per cent increase.

And local authorities are to carry out a review of the way they arrive at recommendations for fee levels in polytechnics and colleges.

The decision to set up the year-long investigation was reached in the wake of agreement among education authorities to recommend increases of barely 3 per cent for home students in advanced further education - but nearly 7 per cent for non-advanced further education and for all overseas students.

For 1986/87 the local authorities are

following the Government's lead and suggesting a 3 per cent increase for home student fees for postgraduate courses from £1,632 to £1,680 and from £520 to £536 for first degree and diploma courses.

But in non-advanced further education, they are recommending a 6.5 per cent increase for home and European Community students, from £321 to £342, and for overseas students a 7 per cent rise from £1,820 to £1,947.

For overseas students in advanced further education, local authorities are outstripping the University Grants Committee's recommendations with a proposed 7 per cent rise across the board, from £3,310 to £3,540. The increase recommended by the UGC is just over 5 per cent.

The effect of the local authorities' decision is that overseas students studying arts courses at polytechnics and other local authority colleges will next year pay more than the recommended rate at universities (£3,540 compared with £3,480).

But students on science courses, which in certain subject areas are only available in the polytechnic sector, will pay less (£2,540 as against £4,370).

This year, fees for arts students from overseas are the same in both sectors, but science courses in the universities are more than £2,000 more expensive.

The local authorities' decision reflects a recognition that they have already lost a lot of overseas students to the more aggressively marketed university sector, and that many science students are on courses not offered by universities.

Union attacks STEAC report

The Scottish Tertiary Education Advisory Council has "consistently ignored the interests of students" in its report on the future strategy for Scottish higher education, according to the Aberdeen Association of University Teachers.

The STEAC report clearly implies that the purpose of higher education is to furnish the manpower needs of the

manufacturing industry and the Government, the association claims.

The demands and desires of students therefore do not have to be considered in redesigning the tertiary system for the 1990s, and the report gives no real consideration to the possibility that people currently excluded from higher education might benefit from it, the association adds.

Courses

International Specialist Seminar

The management of information technology in higher education: and international seminar

7 - 12 September 1986 at Loch Lomond

Information technology has the potential to alter all aspects of a higher education institution.

Whilst many universities, polytechnics and colleges have introduced the new technologies to their operational and teaching practices, few have developed comprehensive policies for management and control. This seminar is being held to give senior staff of higher education institutions an opportunity to examine suitable policies and strategies for their own organizations.

The seminar will be directed by Dr Alex Main, Adviser on Educational Methods to the University of Strathclyde and formerly co-ordinating officer to the Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom.

The seminar is designed for educational managers at senior level (Deans, Vice-Chancellors, Pro-Vice Chancellors, Registrars and others) who are or are likely to be responsible for institution-wide decision-making. It is assumed that participants will be familiar with broad aspects of new information technology. (Applicants may be interested to know that this seminar has been arranged to follow on from the Information Technology in Higher Education international conference which will be held in Strathclyde and Glasgow from 2-5 September 1986).

There are vacancies for 30 participants.

Fees £630 Residential only.

Accommodation has been arranged at the Loch Lomond Castle Hotel which is situated on the banks of Loch Lomond. Seminar sessions will be held at the same hotel.

Further information and application forms are available from British Council Representative offices or from Courses Department, The British Council, 65 Davies Street, London W1Y 2AA.

The British Council

Stirling to study impact of enterprise scheme

A Stirling University team is to study the career aspirations and attitudes of graduates, backed by a £38,000 grant from the Leverhulme Trust. Professor Tom Cannon and Ms Stana Nenadic of Stirling's business studies department will focus on small business, and especially the

impact of the Graduate Enterprise Scheme, which helps graduates set up their own businesses, and which Professor Cannon was instrumental in setting up three years ago.

Graduate Enterprise has now been set up in all Scottish universities and many colleges, and Ms Nenadic said

the aim of the research was to compare the Scottish situation with England, where Graduate Enterprise has only recently been introduced.

Cranfield Institute of Science and Technology, Durham, Warwick and Ulster Universities and Lampeter

overseas news

Sweden axes 'Orwellian' research project

The Swedish Data Inspectorate has ordered the termination of a Stockholm University research project that has cost £700,000 over the last 20 years.

The project, named *Metropoli*, was intended to monitor the lives of 15,000 Stockholm-born in 1953, including such details as social background, education, employment, upward/downward social mobility, physical and mental illness, drug, alcohol related problems, criminal record and the like.

Originally, the subjects of the study, then aged 13, were informed about the project in school but it is now claimed that, over the years, many of them had forgotten all about it, and had no idea that the data was still being collected.

In mid-February, the leading Swedish daily *Dagens Nyheter* ran two articles on *Metropoli*, quoting comments from the public and sociologists not connected with the project to the effect that such research was Orwellian and an academic scandal. There were apparently widespread fears that details had not been kept confidential, although Professor Carl-Gunnar Jansson, the head of the project, denied that any identifiable material had ever been passed on or published. Nevertheless, the Data Inspectorate decided to investigate the matter and last week ordered that all identifying codes and key words must be removed from the *Metropoli* register by May 1.

This, in effect destroys much of the

value of *Metropoli*. Although Professor Jansson's original study was to run for 20 years, he planned to leave the files available for future researchers who might wish to update them. This will no longer be possible.

The original concept of *Metropoli* did not simply envisage recording that in a given year, for example, x per cent of the cohort had a divorce, y per cent were convicted of driving offences, or z per cent promoted to senior executive posts, but to correlate these data with the subjects' previous history.

About a third of the *Metropoli* subjects have demanded to see the material on record (and many have asked to have their files wiped). Public pressure to have the whole *Metropoli* register destroyed is

mounting. The frenetic reaction of the Swedish public to the *Metropoli* affair is itself an interesting sociological phenomenon. One Stockholm sociologist, not himself connected with *Metropoli*, suggested that it might be the straw from a population conditioned by decades of a welfare state into filling out forms that laid bare to officialdom all the details of their private lives.

Whatever the cause, the Data Inspectorate are clearly taking no chances. Not only are the *Metropoli* files to be purged of all identifying names and symbols. So is a smaller, but equally emotive, follow-up medical and sociological survey of women and girls who have had abortions.

Chinese bid to beat rising crime rates

by Geoffrey Parkins

China is to begin a five-year legal education programme to give all citizens a basic knowledge of the country's laws and legal system. The programme, outlined in a circular by the Chinese Communist Party's central committee and the state council, includes introducing legal education into the curricula of all universities, colleges, primary and middle schools.

According to the circular the education programme would not only aim to make all citizens aware of the law and encourage them to abide by it, but also to develop a social conscience and disposition to oppose all illegal activities.

At a recent meeting of the standing committee of the sixth National People's Congress, the minister of justice, Zou Yu, said the legal education programme would give priority to young people and cadres, particularly those in or aspiring to responsible positions.

In recent months there has been mounting concern over the scale of corruption and blatant law-breaking around the country, and over the rising incidence of juvenile delinquency and criminal acts by young people.

The ministry of public security reports that about 70 per cent of convicted criminals are under 25 (in some provinces, the figure is as high as 83 per cent) and the average age of first offenders has dropped from 16 in the 1960s to 12-13.

While juvenile delinquency is recognized as a growing social problem common to many developed as well as developing countries, and that there are many explanations for it, such as earlier maturity, improved quality of life and higher expectations, it is felt that sheer ignorance of the law and of one's social responsibilities to fellow citizens and the state, constitutes a major factor.

The consensus is that young people should be exposed to a knowledge of the law at an early stage, and all local education authorities have been urged to introduce legal education into the curriculum as early as possible.

The government has been greatly encouraged by the results of a number of pilot legal education schemes conducted in educational institutions and work places in different parts of the country. In certain cities it is reported that legal education programmes have reduced the juvenile and general crime rate by as much as 75 per cent.

Open university experiment for Italy

from Federico Gamberini

LA SPEZIA Italy is to have its own open university, the rectors of the universities of Rome and Calabria have announced. Local centres have already been set up in Rome and its surrounding region, as well as three towns in Calabria, the 'toe' of Italy.

The project is still at an early stage, with only one subject being offered. On February 1, experimental tuition leading to a diploma in information

science began in Calabria; this course is soon to be made available in other cities throughout the country. The length of the course will be three years by correspondence, and two for students able to attend classes.

If the project proves successful, expansion is planned in the next academic year. The academic year is to be structured by semesters, each consisting of 150 hours of study and two examinations. Written handouts, to be collected once a week at local study

centres, will account for 70 per cent of course material. No reference has been made to television or radio but personal computers will be available at study centres to enable students to check their own progress. Personal tuition will also take place once a week and apparently only at study centres.

Applicants will have to face an entrance test and, if admitted, will pay £150. Approximately 300 students are involved in the experiment.

The American Peace Corps, 25 years old this year, is making a bid to strengthen its links with colleges and universities and so aid educational efforts in the developing world. Plans are being made for members of faculty to go overseas to train teachers and teach themselves.

The new scheme is an attempt to revive the involvement of American universities, which was strong during the first decade of the corps' existence. Then, the corps depended heavily on the higher education system for training its volunteers. But the Vietnam war, Watergate, and

fluctuating support for the corps under various administrations have meant that the links have been severed. The agency's current director, Lore Miller Kuppe, is considering ways in which the Peace Corps experience could be worked into masters degree programmes in the United States, so that volunteers would not have to put off their graduate education while overseas.

Last August President Reagan signed a non-binding agreement calling for 10,000 volunteers to work overseas by 1989. Today there are little more than 6,000.



Peace Corps volunteer Becky Kavanagh in Bombay in scheme's heyday.

Spreading the peace

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Strawberry fields dilemma

from William Norris

The cat is out of the bag - the bug is out of the laboratory. The commercial company which allowed to spray genetic engineering bacteria on to a strawberry field in California, it has now revealed that the firm conducting the experiments with the genetically modified strawberry plants is not subject to the automatic curbs anyone's permission.

The firm, Advanced Genetic Sciences Inc., is now under investigation by the US Environmental Protection Agency to see what penalty it should suffer for this apparent breach of federal law. EPA regulations late that such experiments should be carried out in confined areas, greenhouses, to prevent the risk of micro-organisms into the environment.

The agency has been more than a little embarrassed to learn, in Washington Post, that during months of discussion and planning which went on before the experiment in November last year, bacteria concerned were happily and unconsciously on the roof of the company's California factory. They had been injected into fruit trees to see if they were taken up by the plants.

Ironically, the test for which permission was sought and eventually granted was never been carried out. It was held up by the opposition of government officials in the California, where the strawberry fields are located. The plan was to inject the gene-spliced bacteria, *Agrobacterium tumefaciens*, into the crop.

In the rooftop experiments, the bacteria were injected under the bark of more than 45 fruit trees - a species which the company claimed would contain them effectively. However, many of the trees leaked sap, and the bacteria were inserted, and the EPA contends that this may have spread the bacteria for miles around.

It is not known whether or not was caused. Environmentalist Jeremy Hahn, whose Foundation on Biotechnology has a lawsuit pending against the EPA for approving the test, said: "Advanced Genetic Sciences message to the entire world is that industry is not to be trusted with the responsibility of policing itself."

Researchers asked to pay back grants

from William Norris

WASHINGTON

"Please can we have our money back?" This is the gist of a letter being sent to educational research laboratories and centres by the US Education Department. Caught by the first swing of the Gramm-Rudman-Hollings budget slashing axe, the department is trying to get its hands on some of the \$678 million from somewhere.

There are two snags where the research laboratories are concerned: the first is that most of them have already received their funds for 1986; the second, that even under the draconian terms of the act they are not legally bound to pay back a penny.

The actual sum the department is trying to raise from the research laboratories is \$1.3 million - 4.3 per cent of its \$30 million research budget for 1986. If its plea fails, it may have to

look elsewhere: to the educational technology centre at Harvard University and the centre for language, education and research at the University of California's Los Angeles campus. Because they are on different funding cycles, these two have yet to receive their 1986 payments. And unless their peers do the honourable thing, it looks as though they may not get them at all.

The overall reaction to the Gramm-Rudman cuts among the higher education community has been predictably hostile, and most college administrators have been marching in step. Last week, however, one broke ranks.

Joe Howell, president of Central Methodist College in Fayette, Missouri, told a congressional education subcommittee considering the 1987 Reagan budget: "The time has come to take stock and learn to live with less."

Spending by Australian industry, too, on research and development is well below the OECD average and has declined over the last 10 years. The report notes that the Commonwealth Department of Science has called on Australian industry to more than quadruple its spending on research and development over the next 10 years, to reach a target of Aus \$1.2 billion a year by 1995.

"Such a massive increase is essential if Australian industry is to become commercially innovative and competitive with its local trading partners on world markets," the report says.

It asserts that education is one of the key elements in improving the scientific and technological capability of Australians as well as assisting in revitalizing industry. A clear message emerging from Japan, Sweden and West Germany was that advances in developing new technologies were not coming from the universities but from companies.

The education council should take further action to ensure the level of professional skills and the quality of equipment in tertiary education and training institutions were adequate, the report recommends, and that vocational education become more responsive to the needs of industry and focused more on supporting economic growth.

There should be, as well, an improvement in the links between institutions and the business sector by: ● Increasing grants which support collaborative programmes linking higher education and industry. ● Funding some research on the basis of matching grants from industry. ● Promoting the use by industry of research and development facilities in higher education and the sharing of industry expertise and equipment. ● Encouraging personnel exchanges and greater mobility between institutions and industry, including secondments and study leave arranged in industry, and expansion of paid return to industry schemes for tertiary teachers.

The report recommends the setting up of industry liaison units in higher education institutions. These units should be built on existing institutional arrangements such as the consultancy companies now operated by many universities and colleges of advanced education.

Among countries in the Organization for Economic Co-operation and Development, Australia ranks tenth in total output and fifteenth in terms of total percentage of gross domestic product spent on research and development. Moreover, Australia's exports of technological products have been falling steadily for more than a decade and are among the lowest of all OECD countries.

East-West study economies

from Barbara von Ow

MUNICH

In what is believed to be the first East-West programme of its kind West German and Polish scientists have set up a joint study programme on economic policy problems in both market and planned economies.

Professor Hans-Joachim Pfaffenholz, of Duisburg University, confirmed that the project, which will be run by the Planning and Statistics was expected to run to the end of 1988.

The scheme is intended to analyse

Law to halt slide in R and D

from David Dickson

PARIS The split between the education and research communities in France has been strongly criticized in a report prepared by a group of international science policy experts for the Organization for Economic Development, claiming that it may be one reason for the lower interest shown by industry in research and development than in other European countries.

The report also criticizes the lack of a research tradition in the *grandes écoles* - particularly the advanced engineering schools where many of the country's future industrial managers are educated - and the 'top down' approach that those trained in the *grandes écoles* tend to apply to the introduction of new technologies.

In both cases, it suggests, major structural changes are still needed in the organization of the French higher education system if it is successfully to exploit the opportunities offered by fields of research such as microelectronics and biotechnology.

The report was prepared at the request of the French government by a group chaired by Viscount Etienne Davignon, former vice president of the European Commission in Brussels, and first commissioner responsible for research and industry.

It acknowledges that the socialist government has made a major effort to boost French science and technology since it came to power in 1981, with several significant achievements. For example, it points out that substantial increases in government spending for research have brought France closer in line with its main European partners, West Germany and Great Britain.

However, the report points out that several structural problems still remain to be tackled, since "despite efforts to bridge the traditional separation between education, research and industry in France, the fundamentals of the system remain untouched."

It says that both the educational and research communities are "separate, self-regulating and often inward-looking bodies" whose "corporate nature" both perpetuates separations and contributes to the isolation of each from industry.

The group suggests that legislative changes should be introduced to inject higher flexibility into engineering schools, as well as a greater horizontal mobility of both research workers and educators between different sectors.

In universities, it recommends a "more flexible, less automatic schemes of career structures and job assignment" arguing that at present the institutional establishment is "too limited, inhibiting the creativity and dynamic performance of their staff."

French research and technology minister Hubert Curien has said in reply to the report's comments that, despite the critical tone, he considered them to be a basic endorsement of the government's current policies.



L'VOV UNIVERSITY



BIRKH

Mutineer set for university asylum

Miroslav Medvid, the young Ukrainian seaman who last autumn twice jumped ship in the Mississippi, is alive and well and about to enrol at L'vov University, according to the official Soviet news agencies and the London-based Soviet Weekly.

According to the Soviet sources Medvid simply fell overboard (twice) from his ship, the grain transporter *Markel Konin*, and was rescued by American officials who tried to recruit him for anti-Soviet activities. According to the Americans, Medvid was trying to seek political asylum, but had his request rejected by the Immigration and Naturalization Service.

There were numerous rumours at the time that something more sinister than incompetence was involved - either that coming so soon after the case of the "two-way defector" Vitaly Yurchenko, Medvid's request for asylum would endanger the forthcoming Geneva summit, or else that the INS had a tacit agreement with the US wheat lobby not to grant asylum to sailors from grain ships.

A Senate inquiry on the mishandling of the Medvid affair is due shortly. After Medvid's final return to the ship, there were wide fears in the US, particularly among senators from eastern Europe, that he would suffer a similar fate to that of the would-be Lithuanian defector Simas Kundras, who, as a result, served four years in a Soviet labour camp, before leaving for the US.

Instead, Medvid, like Yurchenko and the journalist Oleg Blopov, has become something of a propaganda hero, who allegedly resisted the efforts of the Central Intelligence Agency to kidnap and recruit him.

In January, Medvid was cited on Soviet radio, as quoting Mark Twain to the effect that western reports of his death had been "greatly exaggerated". His university career was announced soon after.

overseas news

Musings on pregnancy of mice and men

Experiments at Duke University, North Carolina, may lead to a vaccination against pregnancy. A team of researchers under Dr Patricia Saling is looking for markers, or antigens, found only on the surface of sperm.

Once these have been identified and obtained in sufficient quantities, an anti-sperm vaccine should become possible. It would be long-lasting and immunity could be revived with booster vaccinations.

Dr Saling and colleagues are working with mice, using monoclonal antibodies to identify mouse sperm antigens. So far they have found two that are intimately involved with the interaction of sperm and egg before fertilization.

She said: "We already know we can prevent test-tube fertilization in mice by adding either of the antibody preparations to the egg and sperm mixture. We can also prevent pregnancy in mice by injecting the females with the monoclonal antibodies."

But this procedure, known as passive immunity, only lasts as long as the injected antibodies survive - a few weeks at best. The next step is to isolate the antigens so that they can be used in a vaccine to stimulate the female's immune system.

Therein lies the problem. The antigens exist in minute amounts, so huge quantities of mouse sperm are required for the isolation procedures - and Duke's tired but happy population of male mice has not yet been up to the task.

However, they are working at it, and Dr Saling hopes soon to have sufficient to begin active immunization of mice. Eventually it is planned to relieve the males of their task by using genetic engineering. This will involve isolating and cloning the DNA codes for the antigens, and using laboratory techniques to produce large quantities.

Saling estimates that an anti-sperm vaccine for medical use is at least a decade away. In theory it could be given to either sex, though she believes it would be more effective in women.

Go-ahead for external BED

from Wachira Kigotho

NAIROBI The University of Nairobi is to launch a long-awaited external degree programme during this academic year, says the university's chancellor, Professor Philip Mbiti, has confirmed.

According to the academic registrar, the prospective students must satisfy the university's minimum entrance qualifications. The university will also accept serving teachers who hold S1 diploma certificates awarded by secondary training colleges in the country.

The BED (Arts) degree will concentrate on mathematics, business studies and social sciences. The degree combinations will have to be determined by the college of adult and distance education of the university.

The programme that is supposed to benefit secondary school teachers will be a part-time degree conducted through distance learning. This will be a combination of correspondence materials and residential sessions organized during the holidays.

Reliable sources at the university say that the programme will be organized in three parts. The course will take between five and six years. Currently, there is little chance for mature students at the university because of the large school candidate numbers. The government has been accepting scholarships awarded by British and Canadian universities for teachers qualified to take undergraduate BED degrees in mathematics and physical sciences. The new degree is seen as a solution to a long-existing problem of awarding degrees to high school teachers specializing in social studies.

Meanwhile Kenyatta University has announced that it will initiate the first BED degree (Primary Option). Apart from recruiting from schools, the university will recruit students from among undergraduate diploma of education and S1 holders.

The two teams would get together twice a year.

Arts subcommittee

Chairman: Professor John Cannon, department of modern history, University of Newcastle.
 Members: Professor J P Hutton, department of classics, King's College, London; Professor P Evans, department of music, University of Southampton; Professor M H Harris, professor of music, University of Southampton; Professor J C Laidlaw, department of French, University of Aberdeen; Professor A H R Marshall, school of fine arts and music, University of East Anglia; Professor H B Nisbet, Sidney Sussex College, Cambridge; Professor C Rawson, department of English, University of Warwick; Professor Stanley Penhake, College of Oxford; Professor W L Warren, department of modern history, Queen's University, Belfast.
 * Member of the Main Committee

Agriculture and veterinary subcommittee

Chairman: Professor J G Morris (until further notice), department of botany and microbiology, University College of Wales.
 Members: Professor G R Dickson, faculty of agriculture, University of Newcastle; Dr R F Woodward, department of clinical veterinary medicine, University of Cambridge; Professor Jinks, Agricultural and Food Research Council, University of Aberdeen; Professor J P McInerney, Agricultural Economics Unit, University of Exeter; Professor L Roche, department of forestry and wood science, University College of North Wales; N Shaw, Co. Down, Northern Ireland; Mr N Sandegren, Oxford; Professor A J Webster, Department of Animal Husbandry, University of Bristol.
 * Member of the Main Committee

Biological sciences subcommittee

Chairman: Professor J G Morris, department of botany and microbiology, University College of Wales.
 Members: Professor R M Case, department of physiology, University of Manchester; Professor J L Jinks, department of genetics, University of Birmingham; Professor D H Jennings, department of botany, University of Liverpool; Professor H M Keir, department of biochemistry, University of Aberdeen; Professor A C T North, department of biophysics, University of Leeds; Professor D C Smith, Department of Agricultural Science, University of Oxford; Professor B K Foller, Department of Zoology, University of Bristol; Dr C W Suckling, Bradbury Suckling & Partners Ltd, Maidhead; Dr R G Whitehead, Dunn Nutritional Laboratory, University of Cambridge; Professor R W Whittebury, department of biological sciences, University of Warwick; Professor M H Williamson, department of biology, University of York.
 * Member of the Main Committee

Dental subcommittee

Chairman: Professor T Dillery, Royal Postgraduate Medical School, Hammersmith Hospital.
 Members: Professor H Allred, dean of dental studies, London Hospital Medical College; Professor P H Burke, School of dental dentistry, University of Sheffield; C Hughes Esq, Colchester, Essex; Professor D R Mason, Dean of Dental Education, Glasgow Dental Hospital and School; Professor J I Smith, Department of Oral Pathology, University of Sheffield; Professor R Storer, Dean of Dentistry, The Dental School, Newcastle-upon-Tyne.
 * Member of the Main Committee

Education subcommittee

Chairman: R S Johnson, Selector Post 17, 110 Merrion House, Leeds.
 Members: Professor P J Kelly, department of education, University of London; Professor D Lawton, Director, University of London Institute of Education; Professor A M Ross, Director, School of Education, University of Lancaster; Dr W D C Scrimgeour, Director of Education, Lothian Regional Council; Mrs T Thomas, Headmistress, Cheltenham Comprehensive School, Gloucestershire; Professor J Wragg, Director of School of Education, University of Exeter.
 * Member of the Main Committee

Equipment subcommittee

Chairman: Professor A J Forty, Department of Physics, University of Warwick.
 Members: Professor R J Audley, department of psychology, University College, London; Professor A T Bull, department of applied biology, University of Kent; Professor W I Cranston, department of medicine, United Medical Schools of Guy's and St Thomas; Professor J F Easman, department of electrical engineering, University of Bath; Professor R O'Neil, department of earth sciences, University of Cambridge; Professor D W Pashley, department of metallurgy and materials science, Imperial College, London; Professor Robert G. Roberts, department of applied physics and electronics, University of Durham; R W Shaw, Ove Arup and Partners, 13 Finsbury Street, London; E Woods, Deputy Librarian, University of Southampton.
 * Member of the Main Committee

Mathematical sciences subcommittee

Chairman: Professor D S Jones, department of mathematical sciences, University of Dundee.
 Members: Professor E M L Beale, Waverdon, The Theoretical Division, GEC Research and Development, Harwell; Professor D R Cox, Department of Mathematics, University of London; Professor D E Edmunds, School of Mathematics and Physical Sciences, University of Sussex; Professor B Randall, Computer Laboratory, University of Newcastle; Professor C Storey, department of mathematics, Loughborough University; Professor A M Spencer, Department of Theoretical Mathematics, University of Nottingham; Professor F H Sumner, Department of Computer Science, University of Manchester; Professor J Wiegold, Department of Mathematics, University College, Cardiff.
 * Member of the Main Committee

Medical subcommittee

Chairman: Professor C T Dillery, Royal Postgraduate Medical School, Hammersmith Hospital.
 Members: Professor M R Bond, Department of Psychological Medicine, University of Glasgow; Professor R Coupland, Dean of Medicine, Queen's Medical Centre, University of Nottingham; Professor W I Cranston, department of medicine, United Medical Schools of Guy's and St Thomas; Professor A Cuthbert, department of pharmacology, University of Cambridge; Dr F Fish, School of Pharmacy, 2939 Brunswick Square, London; Professor I E Gillespie, Department of Surgery, University of Manchester; Professor G P Gray, department of child health, University of Wales College of Medicine; Professor J K Lloyd, Institute of Child Health, London; Professor D C Morrell, Department of General Practice, St Thomas's Hospital Medical School; Professor J G Morris, department of botany and microbiology, University College of Wales; Dr B Pentecost, Consultant Cardiologist, Birmingham General Hospital; Professor D C E Speller, Department of Microbiology, Bristol Royal Infirmary; Professor E M Symonds, Department of Obstetrics and Gynaecology, University of Nottingham.
 * Member of the Main Committee

Physical sciences subcommittee

Chairman: Professor A Forty, Department of Physics, University of Warwick.
 Members: Professor E W Abel, Department of Chemistry, University of Exeter; Professor R C Cram, Department of Chemistry, University of Newcastle-upon-Tyne; Professor G W Gray, Department of Chemistry, University of Hull; Professor M Hart, Department of Physics, Schuster Laboratory, University of Manchester; Dr B A Joyce, Philips Research Laboratories, Redhill; Professor R W Nesbitt, Department of Geology, University of Southampton; Professor M W Roberts, Department of Chemistry, University College, Cardiff; Professor W F Vines, Department of Physics, University of Birmingham; Professor E K Walton, Department of Geology, University of St. Andrews.
 * Member of the Main Committee

Panel on studies allied to medicine

Chairman: Dr F Fish, School of Pharmacy, London.
 Members: Professor R J Audley, Department of Psychology, University College, London; Professor M R Bond, Department of Psychological Medicine, University of Glasgow; Professor A Breckinridge, Department of Clinical Pharmacology, Liverpool; Professor Campbell, Kenneth Craik Laboratory, Department of Physiology, Cambridge; Professor M Chapman, Director of Advanced Nursing Studies, Welsh National School of Medicine, Cardiff; Professor P H Elworthy, Department of Pharmacy, University of Manchester; Professor A H E Jarvis, Head of Department of Nursing Studies, University of Glasgow; Professor S L Lookey, Department of Medicine, University of Leeds; Professor J A McFarlane, University of Leeds; Professor J I Smith, School of Pharmacy, University of Manchester; Professor M F Stevens, Department of Pharmaceutical Sciences, University of Aston, Birmingham.

Business and management studies subcommittee

Chairman: Professor J Sizer, Department of Management Studies, University of Loughborough.
 Members: I B Bower Esq, Post, Warwick; Mitchell & Co, Professor John Child, Department of Organizational Behaviour, University of Aston, Management Centre; Donald Clarke, General Manager/Finance Director in Industry; Professor J Sizer, Department of Management Studies, University of Loughborough; Professor C C Gallagher, Department of industrial management, University of Loughborough; Professor R V Fearnley, department of accounting and finance, University of Lancaster; Professor J P Fothergill, University of Manchester; Institute of Science and Technology; J Rothergill, director, foundation for management education, Sun Alliance House, Oxford; W B Stead, Stockers House, Somerset, Somerset.

Social studies subcommittee

Chairman: Professor P Hargitt, Department of Geography, University of Bristol.
 Members: Professor D E Blackman, Department of Psychology, University College, Cardiff; Professor M Blunt, UWIST; Professor P Brethkov, department of town and country planning, University of Newcastle; Professor M Hesse, department of history and philosophy of science, University of Cambridge; Professor A M James, department of international relations, University of Leeds; Professor Kathleen Jones, department of social policy and social work, University of York; Professor P R G Layard, Centre for Labour Economics, London School of Economics and Political Science; Professor R J Nicholson, department of economic studies, University of Sheffield; Professor R E Pahl, Faculty of Social Sciences, University of Kent; Professor D Perkins, department of sociology and anthropology, School of Oriental and African Studies, University of London.
 * Member of the Main Committee

Technology subcommittee

Chairman: Professor K Entwistle, department of metallurgy, University of Manchester; Institute of Science and Technology.
 Members: Professor A D S Barr, Department of Engineering, University of Aberdeen; Dr J C Bass, director of research, Plessey Company; Professor J D E Beynon, Pro-Vice-Chancellor, University of Surrey; Professor J D Jones, Department of Engineering, Imperial College of Science, Technology and Medicine; Professor J D Severn, Department of Civil Engineering, University of Bristol; Mr P C Warner, director, Industries plc; Professor Douglas Wise, director, The Institute of Advanced Architectural Studies, University of York.
 * Member of the Main Committee

UGC under scrutiny

The guardians of knowledge

by Ngalo Crequer

Arguably the most important part of the University Grants Committee is the network of subcommittees.

These 12 committees (plus one for equipment), consisting of around 100 academics, spread over the disciplines and the institutions, represent the heart of university life.

The subcommittees have two roles. They are, or should be, the repository of academic expertise. They are, or should be, the experts in the field, the scholars, with a role in their own right as guardians of knowledge. Each is chosen in his or her own right and is not meant to be representative of an institution, or of special interests.

They are also an indispensable link to the main committee, keeping it informed and alerting it to possible dangers - such as a threat to a minority subject.

Their work goes largely unreported, and is usually only known about by leak. Not because their work is so sensitive that prying eyes must be kept away. Simply that if the UGC itself is only just beginning to cope with the idea that telling people what you are doing and why can sometimes be positively helpful, it will take much longer for this to seep downwards.

In recent times the subcommittees have, for example, looked at the age profile of mathematics teachers, looked at the future of oceanography and recommended where it should be strengthened, and reviewed the position in pharmacy.

The committees usually work closely with the research councils and with other groups if necessary. So in the case of pharmacy, there was a consensus of opinion with the National Advisory Body pharmacy working group and the Pharmaceutical Society of Great Britain.

As may be remembered, the recommendations made in pharmacy, chief of which was to end teaching at Harlow-Watt, were controversial, and the subject was discussed again and again at main committee before the question was resolved.

For the last few months the subcommittees have been examining universities' academic plans and making the crucial judgements about which subjects are strong and which weak.

Although these judgements will be scrutinized by the main committee, in the final stages of the process now beginning, there will only be room for minor changes. The main committee will not have the time (about two to three months) to give more than a cursory look, and will anyway only



want to gain an impression of what each institution will look like as a whole, after the bits of the puzzle have been put together.

As the new resource plan unfolds it will be vital for subject leaders or departmental heads to ensure that the subcommittees are aware of their academic excellence and progress.

Again it is the subcommittees who will do the important work on reconstruction (ie making the cuts fit) and rationalization, suggesting staff and department transfers. All decisions about money must go to main committee but the proposals come from below.

Professor John Cannon is chairman of the arts subcommittee and fits the requirements nicely, a highly respected scholar (historian) and pro vice-chancellor, academic and organizer.

Averaging over the year, he spends about 1 1/2 days each week on UGC business, obviously more in term-time. Some chairman (each is on the main committee) may spend up to 2 1/2 days a week. They get a small remuneration.

Professor Cannon splits his life between pro vice-chancellor work at Newcastle University (senate and council business, endless committees), history (he runs one major class, lectures, gives tutorials, marks essays, and is an active publisher), the UGC, and his family.

The UGC has increased its workload recently, to cope with the resource allocation plan, and main and subcommittee visitations have been abandoned for now.

Professor Cannon would expect each week to spend at least one day in London on UGC business. He is also on the London University working party, another commitment.

He studies his UGC agenda on the train from Newcastle, a good three-hour stint. He prepares letters from other universities. Any interesting

comments he passes on to the committee.

The arts subcommittee meets three times since Christmas, a two day special on a research proposal.

Sometimes on a Saturday, he will re-write UGC papers, statistics. On a bad week, stretch into Sunday morning, week he will spend some answering UGC correspondence.

On reconstruction the votes have been heard from many philosophers, Russian experts putting their particular view. Many individuals have been asked to give their views on the philosophy could be strengthened.

Matters are referred to the committee where there is a national policy, where they think other committees know what they are doing.

Recently the arts subcommittee came concerned about the number of lecturers and lecturers many of these posts are on a part-time basis they have been badly hit.

Professor Cannon took it to main committee and Sir Peter norton-Dyer, UGC chairman, all vice chancellors letting them of their concern.

Similarly a paper went to a group concerned about museums, galleries. Again, these are particularly vulnerable when cuts are made. Museums have been cutting their security costs - of their stock.

The arts committee took them to main committee. They pointed out that universities in London, Cambridge and other museums which were not to be treated as losers.

The main event to further this has been a three-month festival of industry and technology held in a large hall next to the science museum at La Villette, which almost 100 enterprises, primarily industrial companies and government research institutions, used as a shop-window to demonstrate what they can do.

It was visited by almost half-a-million people, including a large number of school groups, and had a strong commercial message.

Professor John Cannon is chairman of the arts subcommittee.

Today - within 48 hours of the French general elections which are expected to end the Socialist government's five-year rule - President Francois Mitterrand is set to open a vast new science museum in an open park at La Villette on the north-east edge of central Paris.

The timing is no coincidence. The government hopes that, in common with other major building projects such as a new opera house near the Bastille, the museum will provide a lasting record of its achievements, just as the capital's existing and more modest science museum, the Palais de la Decouverte, has done for the 1930s. Socialist administration of Leon Blum under which it was established.

But the new museum also has a more specific political function for it is intended to act as the spearhead of a national government-sponsored effort to promote what is known as "scientific literacy" - but in France carries the broader - and longer - label of "la culture scientifique et technique".

The minister of research and technology, M. Hubert Curien, says the French government spent 300 million francs (£29 million) between 1982 and 1985 on a wide variety of measures designed to encourage a greater public awareness of and enthusiasm for science and technology.

This figure is in addition to the estimated 4,600 million francs (£450 million) for the science museum at La Villette, and an estimated 200 million francs (£19 million) spent by local authorities and other organizations over the same period.

Last week, M. Curien - a physicist who previously headed France's national space effort - formally launched a new government initiative under which many of these disparate activities have been linked into a single programme mobilisateur to be overseen jointly by his ministry and those of culture and national education.

The new programme was identified as a special priority area in a three-year research law passed by the National Assembly last summer.

Curien says there is a need for a greater awareness of the possibilities offered by new technologies in industry - "the capacity for innovation which the modernization of our country requires".

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It was visited by almost half-a-million people, including a large number of school groups, and had a strong commercial message.



Mitterrand and the Arlene rocket: aiming for a lasting high technology image

Left's parting shot for science

France's Socialists look defeated but are going out with a bang - a swish Paris museum. David Dickson reports

The government has been trying to spread information about science and technology in order, it claims, to help people engage in democratic debate over major technological choices.

Jean-Marc Levy-Leblond, professor of physics at the University of Nice says: "We must try to reintegrate science and technology into our culture so that people can be given the information they need to participate in decisions about what the world of tomorrow will look like."

He is chairman of a newly-created committee set up to select priorities for government action in encouraging "la culture scientifique et technique".

The professor, an active member of France's radical science movement in the early 1970s, claims that the task is "essentially political" since, given the danger that decision-making in a technological world appears to be increasingly left to "experts".

In contrast with the large, high-prestige projects such as the new science museum, Professor Levy-Leblond and others have been arguing the

case for greater support to be given to decentralized initiatives, in particular the setting up of regional centres for scientific, technical and industrial culture.

Government officials have acknowledged that in the past state-funding for these local efforts has been restricted by the heavy capital expenditures required for the museum at La Villette.

Dominique Periot, a research ministry official says: "In France we have always had a large number of local museums in traditional fields of culture. But there has been little organized to give the public similar access to information about science and technology."

More than a dozen regional centres have now been set up. Another six or seven are in the planning stage. Education is another field in which a major effort is being made under the programme mobilisateur, seen by the Minister of National Education, M. Jean-Pierre Chevènement, as an important extension of the policies he

tried to establish when appointed the first research minister in 1981.

Under one initiative, groups of pupils will be able to spend up to two weeks attached to the science museum at La Villette, spending half their time on conventional school work and the rest on visits to its departments.

A third project actively supported by M. Chevènement is the preparation of a new encyclopedia of contemporary scientific issues. More than 200 French and foreign scientists have been working on the first volumes which the publishing house Fayard has agreed to produce.

The main organizer of the project, science philosopher Dominique Lecourt, says the purpose is to follow as closely as possible the evolution of science and technology.

Finally, government officials emphasize they want to introduce an international dimension to the promotion of scientific and technical culture.

Opinions vary about the results the programme mobilisateur is likely to achieve.

Many left-wing supporters of the government feel that little genuine attempt is being made to foster sufficiently critical attitudes towards the operation of traditional institutions.

They point to the government's lukewarm support for the establishment of "boutiques de science", which used the experience of the Dutch science shops to set up small centres to provide individuals with scientific information that they might need - for example, a trade union group wishing to know the potential dangers of a new chemical.

Although several government departments - led by the ministry of culture - provided initial support, this has now come to an end. Officials argue that the dozen or so boutiques must now seek their funds from regional authorities. But faced with frequently unsympathetic local institutions and the apparent lack of central political support, several are now closing.

Other critics argue that the main cultural problem facing France at present is not a lack of appreciation of technology - they point to the strength of France's nuclear and space programmes as evidence that, at least in some fields, a technical culture is flourishing - but the rigid way in which science and technology are organized.

The country still has a long way to go. A recent speech by President Mitterrand praising the scientific community for its efforts over the past five years was followed by a 10-minute film from the ministry of research. A succession of colourful sequences of computer screens, dividing cells and spacecraft was accompanied by a commentary repeating the message that today's school and university students held "the future in their hands".

It took Italian Nobel prize-winner Carlo Rubbia to point out that, by concentrating on seductive images of scientific and technological apparatus, it gave a highly misleading impression of what scientific work was like.

Rubbia's remark generated applause from the audience. Ministry officials, however, appeared unshaken, just as they have been by criticism that the La Villette project is concerned more with turning science into a spectacle than involving non-experts in technical decisions.

Anglo-Saxons frequently find this emphasis difficult to accept. But the French argue they are merely moving with the times, and that science and technology - as well as the institutions which are responsible for their development - are not viewed with the same mistrust they are in other countries.

Indeed, it is perhaps no coincidence that the man chosen to oversee the construction at La Villette, Paul Delouvrier, was also responsible in the 1970s for the construction of France's first nuclear power stations.

Watchdog on the arts

The terms of reference of the arts subcommittee are:

"To keep under review the needs of teaching and research at universities in the field of the arts and to advise the University Grants Committee on problems."

The subjects covered are English and American literature, Celtic languages and German languages and studies, Hispanic languages and studies, Other West European languages and studies, Russian language and studies, Other Slavonic and East European languages and studies, Oriental, Asian and African languages and studies, Classical studies, Linguistics, History, Archaeology, Philosophy, Theology, Art and Design, Drama, Music, Librarianship.



Mr Norman Hardyman (above), has been secretary of the University Grants Committee since March 1982, when he succeeded Mr Geoffrey Cockerill.

He joined the Ministry of Education in 1955, and served as private secretary to successive Secretaries of State for Education and Science. He worked in the universities branch of the DES and was under secretary in charge of the science branch from 1975-79. Before joining the UGC he was seconded to the Department of Health and Social Security.

Under him are three assistant secretaries, who have their own responsibilities and manage the teams described last week.

Edwin Appleyard, aged 50, is in charge of finance policy, recurrent and equipment grant and university salaries. He has been at the UGC since 1981. He was previously an assistant secretary at the DES.

He joined the scientific civil service in 1959, worked at the DES international scientific corporation, and was secretary of the computer board in 1973-74. Before national service he

was a research engineer. He gained a BSc in mathematics at Kings College, Durham (now Newcastle University).

Mrs Imogen Wilde, aged 37, has just replaced Barney Baker as head of academic policy. Her responsibilities include research policy, redundancy, university organization, tenure and continuing education.

She was previously assistant secretary at the DES concerned with initial and in-service teacher training. She was PPS to Sir Keith Joseph, Secretary of State for Education and Science 1982-83. Previous jobs have included secretary to the Warnock committee on special needs, a part-time assessor on the civil service selection board.

She read history at Durham and carried out research at London's Historical Institute before joining the civil service.

Wyn Davies, aged 38, runs external affairs and the committee secretariat. Other areas include capital policy issues, student related matters, salaries, strategic developments at London and in Northern Ireland, and Jarrett.

He joined the UGC in 1984 after being assistant secretary at the DES responsible for student affairs. Previous jobs include private secretary to the minister for arts (Lord Donaldson), work on non-advanced further education, territorial responsibility for the Midlands, running the 1980 Education Bill, and six months with Sheila Brown in the Inspectorate.

He has a BSc Econ from London University and worked in retailing and for an industrial training board before joining the civil service.

Academy seeks key changes in music policy

The announcement last week of plans for an expensive shake-up at the Royal Academy of Music has brought into the open a series of controversies which have been simmering in the music world for months. The basic issue has been the imagination of Sir Keith Joseph as a drawn in higher education have managed to lead in leading musicians and split the colleges themselves.

Even the academy's 4.5 million appeal has been in trouble, other colleges complaining that the associated publicity material implies that they are not doing their jobs. Of more lasting concern are those outside the academy who believe the plans (given further backing from Sir Keith for separate but related changes) would create a pre-eminent institution, making it more difficult for the others to attract the best students and staff.

However, the question at the heart of the matter is just what Sir Keith and the academy want to do about the alarming absence of leading British soloists on the contemporary international stage. In the prestige instruments (violin, piano and, to a lesser extent, cello) Britons are far from prominent. And the finger is being pointed at the music colleges.

The Academy's initiative, which would cut student numbers in order to devote more attention to the most talented and bring in more money and abroad, does not pretend to be the answer to the problem. By common agreement in the musical world it is not within their power, since students in talent is fully formed well before British years begin. But it is an admission that the British system of musical education is not geared to the needs of the soloist.

As usual, it all comes down to money. Variety of ways, they have all suffered the same sort of cuts which have affected the rest of higher education. The Royal College of Music has had to

cut its academic year from 35 to 30 weeks, the academy has a Stradivarius languishing in a bank vault because it cannot afford the insurance, and none of the colleges are able to do all they would like in the way of intensive teaching or the awarding of scholarships.

Some certainly have tried. The Royal College, for example, raised close to £5 million from its centenary appeal and put in proposals to the Department of Education and Science in 1978 which sought to move in much the same direction which the academy is trying to go today. Manchester as the academy is trying to go today. Manchester as the academy is trying to go today.

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academy was regarded as *premiere inter pares*.

Most of the well-known figures who attended Sir Keith's seminars are understood to be similarly opposed to raising any one college to pre-eminence. The composer Peter Maxwell Davies was one of those who felt that any such development would be dangerous for the many talented musicians who would not qualify for the elite treatment. And, in common with Sir Yehudi Menuhin, he doubted that top-rate international musicians could be brought in to teach at the salaries available in Britain.

"I did a three-month stint at Harvard last year and was paid, by comparison, an astronomical sum for one afternoon's teaching a week," he said. "I was delighted to be an occasional visitor at the Royal Northern but what I was paid was really pocket money." Mr Maxwell-Davies counts himself among those who believe that improvements are needed in a number of areas of the colleges' work, especially in his own specialism of composition, but he is sceptical about Sir Keith's discussions. "I would regard anything which came out of his office with maximum suspicion," he said. "The damage to musical education in the schools has been almost irreparable and he must be held responsible for that."

Others say that the dearth of international stars is even outside the control of the schools. The heads of music colleges (minus Sir David Lumsden, principal of the academy, who has withdrawn from the group temporarily) explained to Sir Keith that the leading violinists have tended to come from the Odessa region of the Soviet Union, Israel and now South-east Asia, where ruthless dedication is accepted at an early age. Nevertheless, all the colleges accept that they could do more. The heads have asked Sir Keith for a state scholarship scheme to allow more tuition for the most talented students, proposing a cut of 200 students nationally to fund the scheme. And the Royal College has reactivated its 1978 proposals, which lapsed because of the general election and change of government, seeking a cut



Pencilled in: Hans Werner Henze

of 100 students without loss of funding.

But it is the academy which has gone farthest, albeit with some ground to catch up in important areas. Its proposal for a four-year degree, for example, would only bring it into line with the other main colleges. But it has attracted some impressive names to its new chairs: the Amadeus Quartet, the violinist Anne-Sophie Mutter and the singer Robert Tear among them.

Sir Keith's agreement would be needed to speed the changes through, since the academy wants to cut its student numbers by about a third without losing money. But Sir David Lumsden is determined that the package, which has been three years in the making, will go ahead anyway. Although he accepts that the loss of top students abroad is less serious than in the recent past, he makes no apology for trying to upgrade provision at the academy. "We have nothing which was not open to anyone else to do," he says. "It's just hard luck that others don't believe it."

John O'Leary

Richard Cobb

An English fortnight at La Ville Rose

Educationally, I flattered myself, I had made a good deal of progress in the previous two years. At least I had covered a lot of ground. In 1943, I had been carrying, on my bicycle, the prepositional usages of "to get", "to put", "to keep", "to let" and "to look" to units of the Czechoslovak Independent Brigade Group scattered all over Huntingdonshire and the Sake of Peterborough. My base was The Old Cross Keys, my sister's house in Hemingford Abbots. After the prepositional verbs, I had graduated to illiterates: shepherds from Snowdonia, Maltese, Egyptians, and quite a few native Cockneys. Or it may have been the other way round: the illiterates and THEN the Czechs.

What must have been educationally the most challenging was having to address vast assemblies - 200,250 of them - of female ATS cookhouse orderlies on the steady progress of the Red Army westwards. They had not seemed very interested in the progress of the Red Army in any direction, and there was something unnerving in the massiveness of their white-aproned presence.

They could have qualified hands down as female entrants to the Munich-based Club des Cent Kilos, had women been admitted to that ground-floor - no other floor would have stood the strain - gathering. At least the girls in white, their hair covered in white caps, listened quietly, plumped in a sort of collective dough-like stupor, their faces as expressionless as stucco. One of them, all at once pulling herself out of semi-slumber with a jolt, did pay me the compliment that I seemed very sincere about the Red Army because I sweated so much in the course of my talks to them which were generally given in the steamy ambience of Army kitchens.

After VJ Day, I was switched from education to army, on opportunities in female civilian employment. I became quite an expert on how to become a stewardess on ocean-going liners, what was the training to become a state-registered midwife, or what were the qualifications needed to get into St Christopher's training establishment for children's nurses in Tunbridge Wells. Well stocked with literature supplied to me by the Brussels representative of the Ministry of Labour, I spent my working day in a room overlooking Les Bains d'Isleval, advising girls who were about to be demobilized from the ATS.

I was still advising ATS on their post-demobilization prospects when, at the urgent behest of the British Council, the War Office, through the headquarters in the Avenue Louise, released me from my military duties for just over a fortnight early in the autumn of 1945. There was to be *Une Quinzaine Anglaise* (I was relieved to learn that this would not include Morris Dancers or Scottish pipes) to be held in Toulouse under the auspices of the university, the Chamber of Commerce, the British Vice-Consul, the local representative of the British Council, and not least, the *commissaire régional de la République* for the South-West.

The *Quinzaine* certainly sounded a pretty high-powered business, of such importance indeed that I could be released from the Army, if not from the top half of that, for a brief and an alpaca jacket in the evenings - for over a fortnight. My own assignment, so I was told by the blue-suited British Council representative in Brussels, was to give three talks on the English Humorous Novel. These were to be in French and were designed to reveal to

the inhabitants of *la Ville Rose* the mysteries of *l'Humour Britannique*. And high-powered it turned out. For, about three days after the opening of *La Quinzaine*, our team was joined by Stephen Spender, dressed in what looked like an officer's uniform, but without pips or other signs of rank. I had not seen anything like it before. Perhaps this was the dress of a War Correspondent? Still, I felt that I too could make a decent showing in public, what with poached eggs on my sleeves and three or four coloured ribbons for having survived. Spender did not stay long. I don't think he even had to give a talk, but he had to be seen and talked to. Then he left as discreetly as he had come.

The rest of the team consisted of members of the British Institute in Paris and an unknown lady who had travelled down by road with the acting director of that establishment, and who did not participate in any of the official activities of *La Quinzaine*. Perhaps they had been sent on some more secret mission. Indeed, they did act rather secretly, and we never saw anything of either of them outside the large and comfortably old-fashioned hotel somewhere near the Capitole in which we were all billeted.

I did my best to interpret *l'Humour Britannique* to vast and hairy young men from Béarn, the Cerdagne and the Pays Basque, who looked like friendly bison and who asked me, I think out of politeness, for a hardy looking like one, if I were a keen *rugbyman*. The girls did not look like bison, but also had warm accents, were rather shy, and had very black eyes. But there was one from the Pyrenees called Marie-Hélène who, coming from the mountains, had brilliant blue-grey eyes and who was not a bit shy. I was to call her Marie, as she asked me to call her, sitting next to her all the way on the bus during a collective outing. We sat next to one another on the way back too.

There were drinks parties every night, and the local representative of the British Council, a jolly red-faced man with an enormous RAF moustache, who could not speak a word of French, gave film shows about the Scottish woolens industry and the manufacture of Harris Tweed. The Toulouseans seemed to like him, deeming that he was *typiquement britannique* and, of course, eccentric.

The acting director and his several days before the official end of *La Quinzaine*, without telling anyone. It was rumoured that they had managed to cadge some petrol off the *commissaire régional*. They were thought to have headed for Spain.

At the conclusion of *La Quinzaine*, I decided that I would return to Toulouse at the first opportunity once I was out of uniform. And indeed I returned there regularly for six months after my demobilization, the period during which I could travel free on the SNCF. On each of my visits, once at Matabiau, rather than heading into town, I would take a tiny red tram, getting out at a stop near the top end of the canal, close to the little Alpine house in wood and plaster with a steep overhanging red roof, a second *maison du canal*, but prettier and much tidier - one had to walk on cloth slippers over the waxed floors - than the variegated *maison de la rue*. Like Simonon, I seem to have sought out the ideal of *la maison du canal*. This one looked like to do with the mysteries of *l'Humour Britannique*, a subject that I had abandoned with as much relief as my uniform.

On the seventh centenary of William of Ockham's birth and the completion of the critical edition of his works, Friedel Weinert assesses the impact of ideas that cut through the philosophy of medieval realism

According to the *Reperioire Bibliographique de la Philosophie* nothing - no full-length study, no article - has been written on Ockham for years. Yet, in a sense, this Englishman, who spent half of his adult life abroad, has been on the international bestseller lists since 1980. Readers of *The Name of the Rose*, maybe unaware, have encountered the spirit of Ockham's philosophy in the learned discussions and reflections of William of Baskerville.

In his own time Ockham was a man of fame and notoriety, admired by the young for his new approach, condemned by the old for his unorthodox novelties. Like many great philosophers, he was a revolutionary of the mind, whose ideas converged to produce a subversive philosophy: established ways of thinking and accepted doctrines began to erode under the impact of Ockham's arguments.

Philosophers hardly ever ask themselves whether philosophical ideas have a social history. In Ockham's case, the repercussions are well documented for his views affected one of the most important social forces of the Middle Ages, the Catholic Church. The history of Ockhamism is one of slow acceptance and silent invasion of the mind against a background of determined attempts by the authorities to raise barriers and apply muzzles.

Four dates are of particular importance to illustrate the manoeuvres of the political control against the growing intellectual credibility of Ockham's philosophy: in 1324 Ockham is summoned to Avignon, then the home of the papacy; in 1339 and 1340 his doctrine is struck off the syllabus at the University of Paris; in 1477, 12 years after his death, an edict is issued by King Louis XI of France to forbid the teaching of Ockham's writings in Paris and the whole of his kingdom.

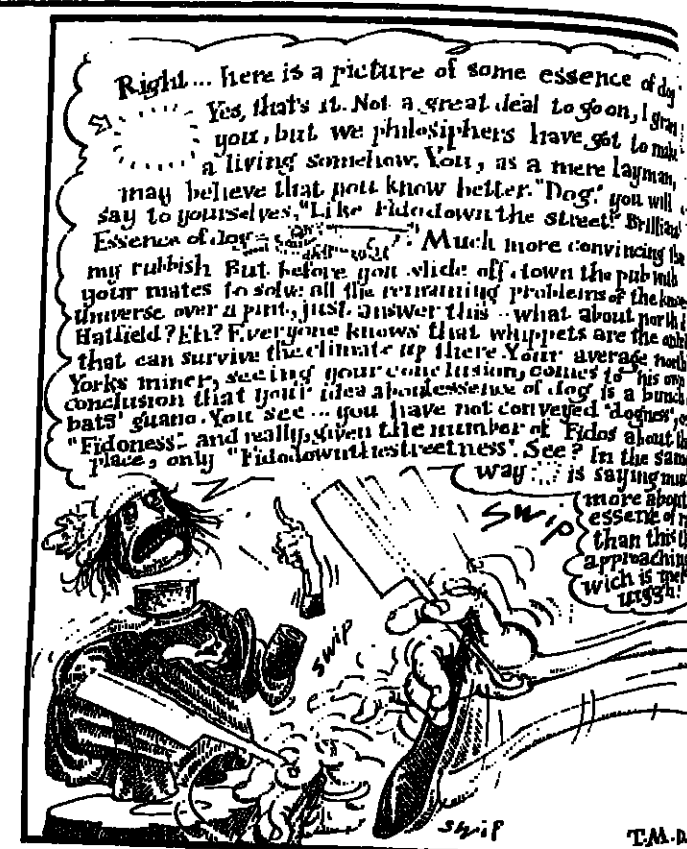
William was born - approximately - 700 years ago in the Surrey village of Ockham. Little is known of his early life except that he studied at Oxford and achieved his status as a bachelor in theology in 1319. He never advanced to more prestigious titles or positions - a university lectureship was not a reward for a man whose lectures and writings at Oxford soon brought him into conflict with the authorities of the Franciscan order.

In 1324 he was summoned to Avignon to have his views examined by a papal commission, probably as a result of the denunciation of John Lutteroll, chancellor of the university. The Holy See had been moved to Avignon in 1309 following an attack of the French king Philip IV. Ockham's purely philosophical writings (later political treatises were to follow) which aroused the hostility of his superiors - in particular 51 theses were to be examined - date from his period at Oxford which ended abruptly in 1324.

Ockham's position, which led to so much unrest throughout his life and later, is known as *nominalism*. Although this doctrine originated and found able defenders in the 11th and 12th century, especially in the person of Abelard (1079-1142), Ockham developed it to great logical subtlety. Nominalism from its beginning was an opposing force: it attacked the entrenched position of the Middle Ages: realism.

Medieval realism is the metaphysical belief that over and above the empirical world of facts, change and chance lies an intelligible world of essences, immutability and necessity. From Platonism derived the idea that *real knowledge* (as opposed to sense impressions) could only be gained from the intelligible world of essences. From Aristotle the Middle Ages have inherited a formal procedure: syllogism. This logical method was used by the Scholastics to guide the intellect by conquest of the world of essences.

For example, both Plato and Aristotle were human, not animals, because there is an essence (also called form or idea) "manhood" of which all humans are instances. The essence is first, the individual thing is copy. The essence



A razor sharp mind

was a worthy object of inquiry while the empirical fact was considered to be changeable, too imperfect to lead to real knowledge. Given the absence of a scientific method and thus the ability to penetrate beneath the surface of phenomena, this disregard for the empirical world still expressed a serious desire to arrive at structures and give explanations.

But the whole spirit of the age, endorsed by what Ockham called "the authorities" was not factual and objective, like the modern "spirit". Knowledge of essences was to be the medieval mind closer to knowledge of the absolute, ie God. Philosophy and theology were interlocked in their search for truth. The tradition which Ockham attacked had conceived the essences as entities or realities of a higher order, located in the divine.

This essentialist claim created the dispute. The question was whether one could hold that besides individual things, like Fido and Peter, there existed entities like "dog" and "man" and, more abstract, "animal". These terms denoting genera and species which, in more neutral vocabulary, are described as "universals" became the bone of contention. Such notions had been discussed in Aristotle's *Categories*; and the problem was set when the neo-Platonic philosopher Porphyry in the third century AD wrote an introduction to Aristotle's text in which he refused to commit himself as to whether genera and species were concepts, ideas or essences. In addition to this type of universal, Scholastic philosophy had to grapple with the further problem, inherited from Platonism, of whether or not universals like "beauty" and "goodness" could be said to exist. The prevalent view was that of Realism: each individual object and thing in the empirical world partook of an essence which had a higher and more perfect reality.

Abelard in the 12th century, and Ockham in the 14th century were two of the outstanding nominalist thinkers who pleaded for a principle of economy in all explanations. In philosophical jargon this has been termed "Ockham's razor": "one should not multiply explanations and causes unless it is strictly necessary. Everything is explained using a smaller number of causes." William of Baskerville, in this admonition, gives a direct translation of the famous formula *entia non multiplicanda praeter necessitatem*, which is the best known formulation (by a 17th-century scholar) of Ockham's nominalist principle.

Consequently, nominalists denied that universals were essences. Only individual things existed. Fido and Peter and many others - and universality was a property of signs. Thus "man", "dog", and "animal" were predicated of a number of things; their universality resided in their meaning. A mental process of abstraction, a sign which denoted that which several things had in common (being beautiful or human) without referring to extramental realities (essences). If you can manage with a simple explanation

("universals are signs"), don't look for a difficult one ("universals are entities, essences").

This sounds very scholastic, Ockham's attack on medieval realism far-reaching consequences.

● The intelligible world of essences which had been the preoccupation of the traditionalists, could be dealt with in a logic of language. Universals were signs, not essences. The realm of essences became the object of linguistic research and was no longer that of a "scientific" inquiry.

● The authorities had explained the existence of the empirical world as the objects which partook of a principle of individuation, a sort of derivation from the general essence which were prior to the individual things. Ockham reversed this.

least theatre! Soundness is just about the only one working in the genre who takes any sort of risk in trying to find new ways of using music theatrically. The question that is not being asked - and it has to be, even though there's never a perfect answer - is "why sing?" I wake up in the middle of the night with those two words ringing in my head.

Such are the thoughts of a man who has been grappling with one of the greatest musicals of them all: Brecht and Weill's *Threepenny Opera*, which opened at the Olivier in a new production of the estate of Weill's wife and most famous interpreter Lotte Lenya.

Furthermore, Ockham's God of joys absolute freedom - he is bound by the laws of nature or of order of grace. It lies in his power to interfere with the course of the world at any moment he chooses. This nominalist view further emphasises the empirical character of the material world: there are no necessary relations in it, no a priori essences to which it himself would bow. The empirical world is characterized by utter contingency, its "existence and order is a fact without any metaphysical ground of necessity" (E. A. Moody). The world is only one world, the empirical world, and a multiplicity of signs refer to it.

When Ockham died in 1347 several attacks on his philosophy and the ransacking of university libraries in search for nominalist literature were still to come, culminating in the edict of Louis XI in 1474. By that time the impact of the Renaissance was beginning to be felt. But the nominalist argument survived: Robert Boyle, one of the founders of modern science, and so are many of our modern

The author was formerly lecturer in philosophy at Goldsmiths College, University of London.

The past is not another country

The Saxon Shore by David Rudkin Almeida Theatre, London

At the conclusion of Act One of David Rudkin's new work an old woman, dying, recounts to her priest a dream that disturbs her sleep: on a bleak shore by a western sea, she and a multitude of people retreat before an inexorably rising tide; time and again they earth over their old fine homes and build anew on top, the houses growing ever smaller, cramped. The priest, comforting, asserts this is a mere-memory of their forebears on the Friedland coast, but to the woman it has the immediacy of palpable experience: it is to her more than remembered story. *The Saxon Shore* is set in the past, the Roman Empire is collapsing; priest and woman are Saxons, settled away from their own people as part of the imperial strategy of conquest. The woman has welled up from the collective unconscious, but it articulates the woman's deep-rooted apprehension of being trapped in the process of history. Confronted by relentless change, a breaking and a re-building, her only refuge is a past that augments, not

quells, her rising terror. Story, myth suffice the play, are its very life-blood, giving action and dialogue a poetic density of texture. It is a gaunt, waste of a world that Rudkin evokes, where life is a constant struggle to yield sustenance from a rocky soil. Yet this land is an object of reverence alike to Roman, Saxon and dispossessed Celt, a source of sustaining myths of power, of joy in toil, of exile and return. The concept of "coming into a kingdom" activates the imagination of all these races, but in ways that separate and oppose rather than unite, enforcing division where there might be harmony. In a scene of profound pathos, Athdark, a young Saxon, and Celriad, a Celtic princess, try to reach through the barriers that racial myth imposes on the individual consciousness: joyfully they compare the names for things that make up the landscape they share - "mountain", "brook", "crag", "soil" - but the words, contrasted, are alien in sound, suggesting a wealth of different allusions for each speaker. They walk the same earth but the landscape of their minds, their modes of perception, are quite other.

What fascinates Rudkin is the way myth determines perception and so

Rupert Christiansen talks to Dominic Muldowney about the new production of *The Threepenny Opera* at the National Theatre

Why sing?

"It used to be bread and circuses," claims Dominic Muldowney, head of music at the National Theatre. "Now it's bread and music. And most of the time it's so bad, so phoney, to use one of Brecht's favourite words. All those dance routines, big production numbers, scene changes - pure narcotic, least theatre! Soundness is just about the only one working in the genre who takes any sort of risk in trying to find new ways of using music theatrically. The question that is not being asked - and it has to be, even though there's never a perfect answer - is 'why sing?' I wake up in the middle of the night with those two words ringing in my head."

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the automatic coupling of Brecht and Weill is another stereotype that Muldowney dislikes. "What people should be thinking is Brecht and Eisler - that was the sustained and consistent collaboration, after all. Brecht and Weill were always pulling different things, partly, I suspect, because of their respective wives, Helene Weigel and Lotte Lenya. Eisler understood Brecht much better and never lets you feel that he's just using a text as a frame for some abstract musical point."

"I'm not knocking Weill, and I'm certainly not going to knock The

shapes identity, and he encourages us to imagine the play with the plight of Athdark and his fellow Saxons, taken from the soil that nourished their myths, Christianized by the Romans, taught a gospel of heavenly reward for rigorous toil and set as an example to humiliate the Celts whose lands they now till. Athdark is more dispossessed in the depths of self than the Celts, being neither Roman, British, nor true Saxon. His pain at being no-man activates the darkest, most primal of all racial myths, that of the wolf-man, cunning predator, whose response to fear and threat is vicious attack; as Athdark wrestles vainly to find for himself a name, the call of that brute self becomes mesmerizing, insidious. Gerard Murphy encompasses the formidable demands of this role with a virtuoso skill: his face and limbs conform through pain to the believable semblance of a wolf; yet the transformations are redeemed from any traces of the comic by the care he and Rudkin take to convince us that the savagery of the beast in Athdark is a metaphor for the spiritual and psychic hunger of the man. Equally brilliant is Murphy's handling of Athdark's "dispossession", his chaos of selves, which Rudkin characterizes as a melody of

voices that usurp Athdark's own with a ventriloquist's abandon. What impresses with *The Saxon Shore* is the way every detail and dimension of the play has an immediate meaning yet is richly metaphorical. There is no explicit reference to present times yet Rudkin is from Ulster and the play can be viewed as a metaphor for the condition of Northern Ireland: a withdrawing imperial force, plantation-settlers, a dispossessed people, an era of change and consequent terror, a conflict of racial memories and of the myths that determine identity. As Rudkin writes in *The Triangle of Death*: "The past is not another country. The past is not another country." It is Rudkin's power to engage with public crisis as it affects the roots of individuality that makes this play such a monumental work of the imagination. Beside it, Howard Brenton's *The Romans in Britain*, which attempts the same subject, seems even more the empty intellectual exercise that it is: where Brenton toys with ideas, Rudkin inhabits them and asks that we share his privileged vision and understanding.

Richard Allen Cave



Dominic Muldowney: training actors not to sing like Lotte Lenya

A reputation for innovation

In these meagre times any university arts department which manages to maintain the status quo in staff and resources is doing well; a chance to expand and develop is real cause to hang out the flags.

City University's music department celebrates its first decade this year and, albeit touching wood, a little self-congratulation seems to be in order. From virtually nothing (two members of staff, eight students and the heaped several colleges of techniques based on one) it has grown in 10 years to a thriving faculty of 80 with a widening reputation for innovation and significant research, particularly in the fast-moving field of electro-acoustics and computer music.

Over the last five years, while others feared going under, music at City has sound engineers within the BBC and commercial record companies comes as no surprise, but the emphasis on technology has less predictably spawned a generation of successful arrangers and performers in the pop world too. *Tears for Fears* and *Dream Academy* are just two highly commercial bands who have benefited recently from the practical and creative skills of two ex-City musicians, who are, to boot, two women in a still male-dominated field.

As an inmate of the proverbial Ivory tower, music at City clearly never stood a chance. "I know 'vocational' is a dirty word among academics, even these days," says Professor Troup, "but at the same time we have to be concerned that our students find some relation between their studies and the real world outside. And we need to offer more than just the old teacher-composer-performer threesome."

This options for second and third years include music therapy ("after all, we in Europe will be the psycho-geriatric clinic of the world in a few years time") and arts administration. A cursory glance at the media job advertisements will confirm that this is becoming perhaps the most important area of employment for arts graduates

bring music to the state it was back in John Dunstable's England; he was a fine composer but he was then considered first and foremost as a mathematician and an astronomer. We felt the old quadrivium entitled us to think of music in a new light, especially with all the additional science disciplines now at our command."

Thus City is the only university to offer music as a BSc degree, rather than BA. And while there is no official demand for new students to come armed with science A levels, many of them do, which gives them an undoubted head start in the first year which embraces acoustics, computing, psychology and an introduction to the recording studio.

The fact that numerous City graduates have subsequently found work as sound engineers within the BBC and commercial record companies comes as no surprise, but the emphasis on technology has less predictably spawned a generation of successful arrangers and performers in the pop world too. *Tears for Fears* and *Dream Academy* are just two highly commercial bands who have benefited recently from the practical and creative skills of two ex-City musicians, who are, to boot, two women in a still male-dominated field.

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Events

Continuing exhibitions:
To March 18. Department of Fine Art, University of Nottingham. J. M. W. Turner: *The Liber Studiorum*.
To March 23. Silver Gallery, Museum and Art Gallery, Birmingham. *New Tradition: the evolution of jewellery 1966-1985*.
To March 19. Reed Hall, University of Exeter. Illustrations and drawings by Neil Arnott and Keith Robson.
To March 21. Foyer Gallery, North Staffordshire Polytechnic. Recent paintings by Robert Frankland.
To March 27. Hunterian Art Gallery, University of Glasgow. *Art Nouveau Designs from the Silver Studio Collection*: designs for wallpapers, fabrics, carpets, linoleum and metalwork. A related exhibition runs for the same period at the Collins Gallery, University of Strathclyde: *The Decoration of the Suburban Villa 1880-1940*.
To March 29. Triangle Centre, Aston University. *The Odd Ball*: sports photographs by Roy Peters.
To April 12. Norwich School of Art, Julian Trevelyan: prints and drawings.
Concerts:
March 15. King's Hall, University of Nottingham. University choir and orchestra. Ives and Brahms.
March 15. Great Hall, University of Reading. University choral and orchestral societies: Handel's *Messiah*.
March 15. Octagon Theatre, University of Sheffield. University chorus and orchestra, with the Harrow Singers: Elgar: *The Dream of Gerontius*.
March 16. Great Hall, University of Nottingham. University choir: choral and organ music by Kodaly and J. S. Bach.
March 17. Concert Hall, Royal College of Music. Chamber concert: Prokofiev, Janacek and Gordon Jacob.
March 18. University of Essex. Gabriel String Quartet: Haydn, Barber, Beethoven.
March 19. Church of the Holy Name, Manchester. Manchester University chorus and symphony orchestra: Verdi's *Requiem*.
March 19. Royal Academy of Music. Two ex-students, Helen Willis (mezzo-soprano) and Nicholas Bosworth (piano) in a programme of songs.
March 20. University of Lancaster. Manchester Community Centre, conducted by Denis McCaldin with Penelope Roskell (piano): programme of Mozart.

Jenny Gilbert

BOOKS

Christianity's clash with unbelief

by David Martin

Religion and Public Doctrine in Modern England
volume two: Assaults
by Maurice Cowling
Cambridge University Press, £30.00
ISBN 0 521 25959 2
also available in a set with volume one
as £40.00
ISBN 0 521 32551 X

In the first volume of his massive project on religion and public doctrine Maurice Cowling expounded the thought of a group of authors who had contributed to his own intellectual formation. Cowling was, as he put it, exhibiting the contents of a narrow mind and celebrating the enmities of some Christian conservatives. These enmities were directed against big-name intellectuals and the world of unexamined and circumstantial prejudice in which they luxuriated. Secular liberal intellectuals were the target and they were held only to pretend to detached academic and professional judgement. In reality, they propagated their various substitutes for religion, probing the resistance to see what they could persuade the English to believe. There was a covert propaganda of political and social faiths. This is why Maurice Cowling's work can treat the issue of religion as the crux of the debate about "public doctrine" as it has been conducted over the past century and a half.

A passage in the preface to volume one helps us to see how Maurice Cowling came to accept this "duty of resentment" about the complacency and the activities of the secular liberal intelligentsia. Though Cowling himself did not have much by way of religious background, he came up to Cambridge ready both for reaction and religion. He was offered both by some of the academics celebrated in the course of the first volume. Yet in the following years given over to writing about politics, he "knitted without a quillotine". He simply harboured an inchoate distress about the state of the Church of England and was exercised as to what could be said about Christianity in the modern context.

Then in the 1970s, small groups of intellectual guerrillas began to find a common target and there emerged a "transformation in the tone of conservative expression". At the same time, in my view, those involved often showed that they had rejected liberal ameliorations of difficulties in Christian doctrine and sought radical solutions. Enoch Powell, for example, both more radical and more traditional in his Christianity than (say) the Bench of Bishops.

How, then, does this second volume follow on from the samples of personal intellectual culture presented in volume one? We are told that the focus is no longer personal but turns on those thinkers who since the 1950s have entered the fray as clear protagonists of Christianity or of unbelief. They are marked out by militancy, so that people like T. H. Green and F. D. Maurice are omitted and will be treated in volume three. The Church militant is represented first by the Tractarians and then by a second Catholic counter-revolution commencing in the late 19th century. Focusing them is the genealogy of anti-Christian thinkers from Herbert Spencer to Bertrand Russell. These are the rival armies which "clash by night".

The style of exposition is once again a succession of intellectual biographies. The choice of thinkers is justified by Cowling's claim that those included are comprehensive, explicit and also "representative" in such a way as to provide "a basis for historical statements". As the book proceeds we are offered stages in the deterioration of the position of Christianity down to the last stage which Cowling characterizes as a bland stand-off.

The first of his stages signals the break-up of the long consensus established in 1688. It is "the assault on the 18th century", which was carried by the Tractarians. They fastened on an exaggerated respect for the capacities



Maurice Cowling: "a duty to resentment"

of the human mind, vis-à-vis supernatural, revealed and dogmatic religion. Tractarians feared that the popular mind would be opened up to religious anarchy and the ravages of philosophers. Authority was needed to control the extravagance of thought and (so far as Newman came to be concerned) only the papacy could cope with democracy and become a religion of the masses.

But just as Tractarianism took the initiative in Christian reconstruction, so counter-initiatives emerged towards the creation of a non-Christian religion. George Eliot provided, in her novels, a natural history of religion and morals designed as an indirect way of releasing religion from dogma and from reference to the greater glory of God. Herbert Spencer, with a more "systematic negativity", provided the most comprehensive non-Christian summation of knowledge and thought, rooting religion in natural causes, and separating humankind from any contact with the inscrutable source of all Energy.

This first and massive break with Christianity, based on a pristine earnestness, was followed by a consolidation which provided a normal mentality for the new scientific intelligentsia. Cowling presents Huxley and Tyndall as the prophets of this mentality, preaching the majesty of fact and the universality of general laws. Through them science demanded "a place at the high table of thought in the same way that Ruskin demanded a place for painting and architecture. Spencer for sociology, Tylor for anthropology, Shaw for the theatre and Lawrence and Ellis for sex.

Doing the honours

The Queen Has Been Pleased: the British honours system at work
by John Walker
Secker & Warburg, £9.95
ISBN 0 436 56111 5

This interesting but partisan book surveys the British honours system in all its glory and absurdity. Its approach is historical, taking us back to the Norman conquest, but concentrating on the last hundred years or so. It encompasses such unedifying episodes as Lloyd George's breathtakingly blatant sales of honours to secure a financial base for his political activities, and Harold Wilson's notorious "lavender paper" retirement honours list in 1976. It also documents in depressing detail the Labour movement's muddled ambivalence towards honours (linked with its longstanding difficulty in sorting out its feelings towards the second chamber) and records, among other things, the

From this major "deterioration" there is a sidestep to selected thinkers—Morley, Reade and Stephen—whose grounds for objection to Christianity rather than experimental science. John Morley proposed a free church in a free state and replaced the nonconformist conscience with secular integrity. Winwood Reade in particular criticized Christianity for worshipping a "hideous image of dirt and blood" and being based on lickspittle humility and fear.

At this point we come to a crux in the argument. In Cowling's view the chief defect of non-Christian thinkers up to the 1860s was "the assumption that fact and reason could be separated, that the rational and irrational could be overcome by converting religion into poetry or social doctrine, and by permuting ethical earnestness to carry humanity towards a problemless future". Their heirs still followed them in working hard to substitute a new doctrine for Christianity, but they also suspected that the savage and primitive was more enduring than hitherto recognised. More deliberate remedies would be required if the collapse of Christianity were not to be the collapse of society.

From this point on there are a variety of ways out of "difficulty", and there is also the adoption of "illusionless pessimism". Gilbert Murray and James Frazer, for example, both espoused the Greek Enlightenment but with different dying falls. For Frazer the higher forms of civilization and religion really sank back into the universal muddle of the formulae of the folk. For Murray, civilization was a flame threatened by a multitude of

singular failure of Mr Attlee, in the period 1945-51, to lay down a good vintage of Labour peers.

Most of the earlier chapters take us through well-trawled waters, albeit with useful embellishments based on the author's own research. The trees of ennobled families are set out in impressive, if at times somewhat tedious detail. There is a tendency to leave suspicion of unnamed conspiracies hanging in the air as when, in the context of a survey of the history of the Vesty family (whose baronial status dates back to Lloyd George's 1922 Birthday honours list), the author hints darkly at the real significance of the recent House of Lords decision in favour of Vesty in an important tax appeal. At least, one assumes that something is being hinted at, given that there is no other discernible reason for mentioning the case.

The book is not a work of neutral and reflective scholarship. The author's inspiration came from his work for the left-wing Labour Research Department, in the course of which he noted an uncanny affinity between the list of the friends of the Conservative Party and its various associated bodies and the substantial list of company

new fanaticisms. (Indeed, this has been a frequent enough theme of unbelief: Christianity, especially the Roman version, is bad enough, but compared with nationalism, Marxism, fascism and invocations of the blood, not all that bad.)

Cowling's last group of unbelievers comprises varied thinkers, some—like Lawrence—proposing a paganism of the blood, others like Maugham attracted by eastern religion, yet others—Shaw, for example—invoking the Life Force. Just as the philosophers and poets took over from the priests, so now it is the turn of the publicists to propose new ways forward. H. G. Wells invoked the world of books, circulating libraries and news as a vehicle of new and better preaching. He was a man, in Cowling's view, obsessed by religion, and he reshaped many themes of Christianity, such as sorrow and atonement, into a wider rhapsodic and mystical frame presaging not the old "catholic" church but a world state. Russell, of course, exemplified a rhetoric of growth and love, as opposed to possessiveness, conjoined with "illusionless pessimism": the "firm foundations of despair".

The last section of Cowling's argument comprises a kind of second religious counter-revolution based on literature and very consciously rejecting public school or evangelical or Kiplingese Anglicanism. He traces varied genealogies through Coventry Patmore and William Hurrell Mallock to Chesterton, Belloc, Frederic Coepstone, Christopher Dawson and Graham Greene. As elsewhere, it is not absolutely clear why all of these were chosen rather than others, and

owners and directors honoured under the Thatcher Government. Thus the early chapters serve as a substantial hors d'oeuvre to the main course, which comes in the last two chapters—comprising a worrying, but in the end less than convincing indictment of the present Government's conduct in this area, amounting, in the author's view, to something not far removed from the illicit sale of honours.

The honours system is (as the latest New Year list demonstrates) riddled with absurdities and reflects the church snobbery and distorted values of our society. On these grounds alone it is an eminently worthy subject for study. But there are two other important problems, both grasped but not resolved by the author. The first is the continuing reliance upon prime ministerial patronage to provide new man-power for the second chamber of Parliament. Walker's disapproval of this is motivated largely by his determination to expose the misdeeds of Conservative prime ministers in general, and of Mrs Thatcher in particular, and makes little reference to the substantive contributions of peers. He does, it is true, note that some prime ministerial appointees have later changed sides (or their

the loss of Eliot to volume one particularly noticeable.

This whole trajectory is exposed by Cowling in scholarly and lucid writing. He provides fresh angles, material and brings together unusual focus what is otherwise tattered. But I have to admit that after being escorted through this lery, I cannot fully recognize malign features of the English course, there is a unifying thread, but I cannot pin-point it and where the really culpable are in secular intellectualism comes before. Is it the superficial and moralistic approach to the pseudo and difficulties of political action? the endless costume comedy pseudo social scientific grounds? "the system", with its accompaniment of chronic political guilt? Is it the accept real opportunity costs? Or willingness to sacrifice whole generations of panaceas in (say) education and foreign policy?

I would like to know the Enemy's less indirect and allusive way, and also hope eventually to know what being positively recommended. Obviously, we are being invited to gauge the real obdurate difficulty of our existential and political condition. Politics is a broken-backed actor, offering no substitute for salvation. And we are also being reminded of the frailty of our scholarship and our objectivity. What we promote for our academic podium is often propaganda: lay sermons in statistics not stones. But is Maurice Cowling arguing, as the left used to argue, in favour of radical relativity and doubt? "unknowability"? Just how can we be so sure? Most importantly, what are the other elements that inform the positive position he hints at so elusively and allusively?

A basic trouble seems to me that we are given a lot of text and next to no social context. Few reasons are given why we should regard the intellectual, selects as representative or ideal. And Maurice Cowling too easily sees literature as "a register of a nation's mind", he seems to accept a Leviathan notion that the debate will be focused in the literary intelligentsia. At any rate, he criticizes English schools for not treating literature sufficiently in terms of substantive argument about "public doctrine". Yet "register" of what is going on (if it exists) may well be located elsewhere. The church itself has conducted a debate about public doctrine of grounds which go back to Tawney, not mainly in reports, pamphlets and memoirs. The issues of religion and morals in media, education and economy are often debated in just this way. Mr Cowling has raised an issue of the first importance. But does it in case always the right register?

David Martin is professor of sociology at the London School of Economics.

BOOKS

Gothic is good for you

In the Circles of Fear and Desire: a study of Gothic fantasy
by William Patrick Day
University of Chicago Press, £14.95
ISBN 0 226 13890 9

"I want to make your flesh creep", says the Fat Boy in Dickens's *Pickwick Papers*, voicing what might be seen as the aim of every Gothic storyteller, whether amateur like the Fat Boy or professional like "Monk" Lewis and Bram Stoker. But according to William Patrick Day the Gothic offers us far more than "a good scare": in his study of Gothic fantasy, *In the Circles of Fear and Desire*, he argues that such works as Maturin's *Melmoth the Wanderer*, Le Fanu's *Carmilla* and Wilde's *Picture of Dorian Gray* have "shaped our ways of looking at and understanding our world".

Taking it as axiomatic that any importance Gothic texts may have depends on the pleasure they give the reader, Day sets out to examine the sources and uses of that pleasure. He draws on a variety of works which, as well as being popular in their own day, continue to exert through the invention of characters—Mary Shelley's Frankenstein, for example, or Stoker's *Dracula*—who have acquired mythic status. Within this variety Day finds a significant degree of unity. By demonstrating the "relatively strict conventions and formulas" which novelists have employed since the 18th century he is able to disclose a common purpose beneath the diversity of guises in which Gothic appears.

Through highly conventional narrative, so Day argues, an anti-conventional vision of reality is created, allowing the reader to confront, and so transform into pleasure, the fears which arise from real experiences. Not notably those involving social identity and, by extension, family life. As an escape from the way ideals are typically handled in either the romance, with its questing hero who successfully finds his identity, or the

A still from *The Bride*, showing Baron von Frankenstein at work

realistic novel, where identity is stable, the Gothic is shown to provide a critique of the literary and social world from which it springs. Crucial to the argument here is Day's careful distinction between Romantic and Gothic conceptions of the imagination, one of his main points being that Gothic "refuses to offer a transcendent vision and empowering mythology, a new cosmology and an ethical imperative". Denied an "alternative world", but unlike the fictional hero who remains trapped in endless fragmentations and chaos, readers are led "directly back to the world in which they must live".

Seen in this way, Gothic is an essentially healthy form, reactive and parodic by its very nature and yet, as Day shows when he traces the emergence of the detective figure out of early female protagonists like Mrs Radcliffe's Emily St Aubert, capable of bearing literary progeny as well as of producing its own fictional monsters. But because the style and literary worth of individual works are not considered at all, the impression is left that Gothic is good for you, irrespective of its artistic qualities. Consequently, although Day gives a convincing account of the relationship between 19th-century Gothic's charting of a nightmarish landscape and the internalizing of fragmentation which is characteristic of modernism, he does not indicate how we are to judge between, say, Henry James's *Turn of the Screw* and another work depicting a terrified woman, the film *Halloween*. He is surely right to include this film in his discussion of 20th-century Gothic, and to argue that nowadays visual media are pre-eminent in continuing the tradition; but he is so busy analysing motifs and revealing the tenacity of Gothic themes and methods that he forgets to ask questions about artistic merit and leaves unchallenged the

motives behind the commercialized making of such spine-chillers.

Here, literature could have provided some antidotes, and it is a pity that the only modern text to be given prominence (and unfortunately so, since Marlow's name is misspelled throughout) is *Heart of Darkness*. Had he explored some more recent instances of Gothic writing, Day would undoubtedly have been struck by the new uses to which writers, and in particular women writers, are putting the themes of imprisonment, violence and pleasure which he finds recurring throughout the history of Gothic. At the very beginning of his book, Day tells us about a friend who read his manuscript and charged him to "make it more feminist". Nobody could blame Day for writing the book he himself wanted to write, and the objection is not that he chooses not to develop the feminist implications of his assertion that the Gothic heroine's passive acceptance of victimization is a strength which allows her to avoid enthrallment and restores her to the real world where she can become a wife and mother. Rather, it is that early on he makes up his mind about the shape and nature of his argument and that his desire to trace an "unbroken tradition" becomes paramount. If his friend had persisted and lent him some books by Angela Carter, or Isak Dinesen perhaps, he might have felt his skin creep as any scholar's does when the ramifications of his argument begin to seem endless; in the long run, though, his book, interesting and valuable as it is, might also have gained the dimension of critical judgement it lacks.

Valerie Shaw

Dr Shaw is lecturer in English at the University of Edinburgh.

Keeping it short

Six German Romantic Tales: Heinrich von Kleist, Ludwig Tieck, E. T. A. Hoffmann

translated by Ronald Taylor
Anglo Books, £4.95
ISBN 0 946162 17 4

The Brief Compass: the nineteenth-century German novel
by Roger Paulin
Clarendon Press: Oxford University Press, £18.50
ISBN 0 19 815810 6

In the age of the great European novel what on earth were the Germans doing? These two books help to provide the answer: they were busy, sometimes apologetically, sometimes more confidently, developing the possibilities of the shorter narrative that had grown out of the Renaissance novel. While Ronald Taylor's *Six German Romantic Tales* provides its own short prose narrative, answer in the form of translated examples, addressing itself to the general reader with little knowledge of German, Roger Paulin's *The Brief Compass* discusses the achievement and its background in a manner that presupposes the academic specialist.

In choosing two works each by Tieck, Kleist, and Hoffmann, Taylor is able to illustrate different emphases within the Romantic generation; the disturbing amalgamation of psychology and the supernatural (Tieck's *Eckbert the Fair*, *The Runenberg*); the fragility of human love and trust in a world without absolute order (Kleist's *The Earthquake in Chile*, *The Betrothal on Santo Domingo*); the dangerous proximity of the divine and the

devilish and the irreconcilability of the ideal and the everyday (Hoffmann's *Don Giovanni*, *The Jesuit Chapel in G.*)—though the case for seeing Kleist as a Romantic is not convincingly made. The stories are prefaced by a brief account of German Romanticism, biographical sketches of the three writers, and a few comments on the individual works.

The translations themselves are admirable. One may quibble here and there—at the rendering of the poems by Tieck, for instance—and one may doubt the wisdom of breaking up Kleist's lengthy paragraphs into more manageable portions, precisely because this gives more pause for breath. Yet Taylor has managed to make himself virtually invisible as translator, to commend these stories to the non-German-speaking reader by the readability of his rendering.

Paulin's book, unlike some of its predecessors, is neither a collection of individual interpretations, nor another attempt to define what the German *Novelle* is or should be. It is concerned above all to examine what creative writers were able to achieve in the medium of the special qualities and advantages; and if he expresses a judgement on an individual work, it is not in terms of its conformity (or otherwise) to a set of preconceived generic criteria.

Over and above the detailed critical observations and individual interpretative insights scattered along the way, his chief merit is his ability to set both theory and practice in a wider context, both literary and sociological. Paulin does not divorce the *Novelle* from the general developments of German literature. He pays much more than lip service to the links with the romance antecedents of the Renaissance and succeeding centuries. He conjures up other masters of the shorter narrative from America and

other European literatures—Washington Irving, Melville, Poe, Lermontov, Leskov, Turgenev, Mérimée, Maupassant, and even the Dane Steen Steensen Blicher—arguing that German literature has nothing to lose by such comparisons. Finally, he examines some of the theoretical pronouncements, especially the more famous ones of Goethe, Tieck, and Heyse, not as absolute or timeless prescriptions, but as products of their own historical period and their authors' creative development.

The remarkable and surprising thing is that Paulin sets about this task in the space of 128 pages. The title *The Brief Compass* might describe the proportions of the book as well as its subject-matter. It is a work of great compression and one which gives evidence of a background of wide-ranging scholarship and presupposes fairly extensive knowledge in its readers. When it broadens out into more detailed discussion of individual texts, it tends to select those from the standard repertory (*Die Marquise von O.*, *Die Judenbuche*, *Der Schimmelreiter*, etc.). Yet it also takes account of many others, some of which will not be familiar to undergraduates. An effect of this compression is that the argument is occasionally difficult to follow; some passages are so packed with points for consideration that the reader may lose the thread.

The Brief Compass is not a book which reaches near or grand conclusions, but one which presents a stimulating way of looking at a genre which can "stand on its own as one of the major achievements of German literature".

David Turner

David Turner is senior lecturer in German at the University of Hull.

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TAVISTOCK

11 New Fetter Lane, London EC4P 4EE

BOOKS

Crossing barriers

The Contest of Faculties: philosophy and theory after deconstruction by Christopher Norris
Methuen, £16.00 and £6.95
ISBN 0 416 39930 4 and 39940 1

Philosophy is the hugar of the deconstructionists. Officially they want it debunked, knocked off its arrogant pedestal. But in their hearts they want to emulate it, eager for the plaudits of theoretical sophistication. Such is the dilemma of Christopher Norris—a deconstructionist who professes the company of philosophers. Norris is anxious to distance himself from the wild irrationalism of "vulgar" deconstructionism. His new book, a collection of self-contained essays, reaches out for *rapprochement* with analytic philosophy. He gives a sympathetic airing to the views of the analytic school's most illustrious figures: Frege, Tarski, Quine, Davidson, Kripke.

It is Richard Rorty, though, the respected American philosopher and maverick supporter of deconstruction, who dominates the debate. Norris doesn't go the whole way with Rorty. Rorty only approves the negative side of deconstruction, the debunking of philosophy; he rejects any attempt to build a theory out of it. Rorty is a radical pragmatist, believing in a plurality of "discourses", each with its own aims and techniques, but none with any privileged status with regard to truth; truth is whatever is warranted within a discourse.

Norris rejects pragmatism and sees deconstruction in more positive terms, as a theory subject to the most rigorous logical defence. Deconstruction offers a sceptical account of meaning and truth and can engage directly on these topics with analytic philosophy of language. Indeed Norris appears to philosophy of language in disputes internal to deconstruction. For example, he rebukes his wilder colleagues, who dismiss all extra-textual reality, by offering a post-structuralist appropriation of Frege's distinction between sense and reference. References to objects, he argues, are indispensable even though (and this is comfort to the deconstructionists) they are mediated by the senses of linguistic referential devices.

Norris also puts pressure on the extreme relativism in deconstruction by engaging the debate on "radical translation" between Davidson and Quine. Unfortunately, this discussion is inconclusive. More specific comparisons would have been helpful between the scepticism of deconstruction and Quine's "indeterminacy thesis". Also, where does Derrida stand on Quine's

holism or his doctrine of "epistemology naturalized", neither of which is mentioned though both are germane? Norris is more inclined to juxtapose ideas than to reason them out. He correctly identifies a lingering scepticism in Davidson's theory of meaning but still sees that theory as a threat to deconstruction. So what is the outcome?

Perhaps the best confirmation that scepticism about meaning is a live issue in the analytic camp lies in the foreword by Saul Kripke's recent book on Wittgenstein. The question of what it is to "follow a rule" (in language) has been thrown wide open. Here is congenial ground for the philosophically-minded deconstructionist. It would be interesting to have Norris's view.

Norris has shown that as a theory of meaning, systematically presented, deconstruction deserves the attention of philosophers. The merits of the book lie in its well-informed and even-handed attempts at bridge-building. Much, however, remains incongenial to the analytic school. Deconstruction is still more "cultural studies" than analytic reasoning. The emphasis is on philosophy as rhetoric or "narrative". Norris traces ideology in theories (for example, conservatism in aesthetics) as often as logical consistency. In the "contest of faculties" he wants literary theory to replace philosophy. Yet in the end to see philosophy just as narrative is hopelessly beside the point. It's like the person, asked to comment on the lecture, who insists on describing the lecturer's clothes.

Peter Lamarque

Peter Lamarque is lecturer in philosophy at the University of Stirling.



An emotional moment from Beethoven's *Fidelio*: the freed Florestan (played by John Vickers) embraces Leonore (Hildegard Behrens) in a 1970 production at the Metropolitan Opera in New York. The picture comes from *Magnificent Onstage at the Met: twenty great opera productions* by Robert Jacobson (Thames and Hudson, £25.00).

BOOKS

Evolving minds

Our Knowledge of the Growth of Knowledge: Popper or Wittgenstein? by Peter Munz
Routledge & Kegan Paul, £17.95
ISBN 0 7102 0460 4

One of the topics discussed in this book is "evolutionary epistemology", and in Professor Munz's hands this proves to have a number of strands. To start with, Munz is interested in the analogy between the biological evolution of species by mutation and natural selection and the Popperian evolution of theories by conjecture and refutation.

Munz is not an entirely uncritical admirer of Popper. He is uneasy about Popper's dependence on the correspondence notion of truth, and prefers to think of theoretical progress in terms of increasing explanatory power. In itself this isn't a bad suggestion: the major objection to Popper is the gap between his falsificationist epistemology and his metaphysics of correspondence. But unfortunately Munz doesn't really seem to be thinking on this level. Rather he says:

... we cannot achieve objectivity by separating the world from the

mind. In order to do so we would have to separate our knowledge of the world (mind) from the world. This cannot be done because we cannot have knowledge of the world without having knowledge of the world.

This is not uncharacteristic. Munz often lights upon sensible suggestions, but then shows himself too to be at sea in the surrounding issues. Thus consider some of the other strands in his "evolutionary epistemology". Like a number of other contemporary philosophers, Munz thinks that the connection between biological evolution and epistemology is more than just an analogy: a "naturalized" epistemology ought to recognize the evolutionary basis of human intellectual abilities. But this only raises further questions. Even if we accept that we are products of evolution, how far does this limit the uses to which we might put our intellectual abilities? In particular, does the naturalistic approach necessarily force us to some kind of epistemological fatalism, as a number of contemporary philosophers seem to assume?

Munz's answers to these further questions are unclear. He apparently accepts that there is more to epistemology than our biological heritage, since at one point he argues that evolution transcends the purely biological, and eventually reaches a stage where consciousness, and an open society, together produce science. But he also

BOOKS

Touching a chord

Music and the Emotions: the philosophical theories by Malcolm Budd
Routledge & Kegan Paul, £14.95
ISBN 0 7102 0520 1

This is a book for thoughtful music-lovers and academic philosophers, in so far as they are the same people: you need to be both, I think, to find it a rewarding study. Dr Budd offers no theory about music, but he discusses several—indeed, those examinations occupy most of the book—and he takes the phenomena of musical appreciation as given; his concern, however, is with the philosophical question. Granted that we recognize some music as "expressive of emotion", and sometimes value it precisely on that account, how is this fact to be understood?

It is important to see just how restricted Budd's question is. Many, many pieces of music are valued not because they are emotionally expressive, but because we find them satisfying or convincing or attention-holding in some other way, or again because they arouse feelings in us that are fun for their own sake, and which might be just as efficiently aroused by other pieces or by quite non-musical things. In the latter cases, what we enjoy is not what the music is expressive of, and Budd reasonably sets them aside; but he also—rashly, as I think—sets aside the former, aesthetically interesting category, as if there were

an easy distinction between satisfying music that is emotionally neutral and satisfying music which is specially valued for its expressiveness.

He declares his heartfelt, very Cambridge presuppositions quite early on. It is right to judge that the Adagio of the first "Rasumovsky" Quartet expresses "sadness of extraordinary depth and sincerity", right that the state of the "Italian" Symphony is "imbued with *joie de vivre*", right that the introduction to the finale of Mozart's G minor quintet "expresses ultimate despair". Not to concur is to betray inadequate appreciation of the music; for if we are right to value it for just such reasons, as often we may, then not to value it for those reasons is to be missing something. (Berlioz was missing something not only when he found the Prelude to *Tristan*, which Wagner had dedicated to him, quite senseless, but also when he unreservedly admired Mozart's G minor Symphony—the latter one—without remarking anything of the "tragic" character we now attribute to it.) We need, then, an account of how it is that some pieces can be rightly judged to be expressive of certain emotions, and valued on that ground (it would make no sense to say that you valued a piece *tout court* because it made you feel sad or ultimately despairing). And there will be something suspect about any explanation of musical *Affekt* which proposes independent accounts of, on the one hand, "purely" musical satisfyingness, and on the other of the sort of musical expression that can be identified by reference to extra-musically familiar emotions.

Budd's procedure is to consider a string of theories about music (among them, only Schopenhauer's has specifically philosophical pretensions) which

might be read as delivering answers to these challenges. Handicapped as he is by the fact that music is able of expressing specific emotions and therefore that emotive descriptions of music are either true or false irrelevant to assessing their truth, Budd treats that view with respect, pending some demonstration that purely audible musical features can sufficiently account for responses. Carroll Pratt claimed to demonstrate that the capacity of music to imitate "bodily movement" was sufficient explanation; Budd says that he was confused as well as awestruck. Edmund Gurney maintained the value of music resided in producing emotions entirely peculiar to the medium, and that its power to elicit supra-musical emotions was secondary, a cruder business of inducing non-verbal behaviour; Budd is not too

He then turns to theories which attach the value of music to its power of evoking extra-musical emotions. Schopenhauer diagnosed music as pain-free enactment of the emotions of several irredeemable fates. Socrates is to symbolize the virtue of *temperance*; Budd retorts that we do compare musical works with already known "forms of feeling" when we assess them. Leonard Meyer suggests (among many other things) that a formation-theory provides a basis for explaining how pleasurable tension and relief derive from a listener's probabilistic expectations about how given passage will continue; Budd complains (among many other complaints) that this leaves the pleasure we take in music we already know wholly mysterious.

If you are one of the two-headed creatures I mentioned at the outset, Budd's intricate arguments command attention. At the end, he suggests that any good theory of music—one which would answer the questions he poses—would have to be "less monolithic" than those discussed. Presumably he means that music should be recognized as having various powers to move us, not to be reduced to some single formula. But there are aspects of his own criticisms that seem *Procrustean*, which is another way of saying "monolithic".

For one thing, he holds that the ways in which emotions and feelings can develop have nothing distinctive about them that is not shared with countless other natural and artificial processes (the sun rising and setting, a volcano exploding). At a blow, it appeals to the totemic representation of feeling-sequences are disqualifying explanations of the humane power of music to move—but is the move well-aimed? For another, he declares that analogies between musical sequences and natural vocal expression are valid "only if the thought of a voice is present to the listener", which is mostly won't be. So much for characterizations of music as passages of questions, sudden doubts, reassurances, conclusions—and for the advice every performer has had from his teachers: "You must play this as if you were singing it!" (And can I not realize, after a fraught confrontation with one of my seniors, that I was reacting of my father—though no thought of my father was present to me at the time?)

Similarly, Budd maintains that analogies with "the non-verbal behaviour" expression of emotion are useful because it is "capable of representing only the crudest differences between emotions"; on the contrary, quite simple "behavioural expressions" can, in context, be fraught with meaning (Compare theatrical performance and then consider symphonies.) general Budd is notably insensitive to the bearing of context upon meaning and indeed to the bearing of historical context: would western art-music have been such as we now appreciate it, were there had never been such a thing as opera? (a form which Budd never invokes?) There are possible worlds in which the available music would retain "explanation" in any of the terms Budd aims to rebut. Our actual world is different, and our actual music-giving better grounds for valuation as to course, argument and story-telling than he ever allows.

David Papineau

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David Murray

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BOOKS

The view from the Treasury

Government and the Universities in Britain: programme and performance 1960-1980 by John Carswell
Cambridge University Press, £19.50
ISBN 0 521 25826 X

John Carswell was a Treasury official who became the Treasury assessor on the Robbins Committee, then head of the universities' branch in the new Department of Education and Science and later Secretary of the University Grants Committee from 1974-77 before leaving the civil service to become Secretary of the British Academy. His book, written in an elegant, witty and maverick style, represents one of the most important contributions to our understanding of how British higher education has reached its present state.

In spite of its somewhat omniscient title, however, *Government and the Universities* needs to be read with some caution. First, it is the personal record of a participant, extremely valuable because of the insights it gives into policy-making, but necessarily only a partial view. Second, in so far as it

purports to record a coherent period from "an almost unstoppable wave of demand on public funds" to "a sandy beach with the tide almost out of sight", that period runs from 1960 to 1978 not 1980. Indeed Carswell's lowest point described in the UGC Annual Survey for 1975-76, "the growth of resources" and "a deep and damaging uncertainty" occurred five years before the nadir of the 1981 cuts. Third, the author's perspective is deeply coloured by his background and training. This is a Treasury view of the period, not an educationist's nor a vice-chancellor's.

But it is this characteristic which gives the book its special interest. Time and again events which we have come to take for granted appear to take on a new contemporary significance. Thus the outlines of the 1962 crisis when the Chief Secretary to the Treasury, Henry Brooke, reported to the House that the Government had been unable (for the first time) to meet the UGC's financial demands for the coming quinquennium, are well known. What is not well known is that the Treasury had deployed a (Jarratt-like) cost-effectiveness argument against the UGC nor that it had counted on a case for "tunneling through the hump", as it did again in 1978, because it expected student numbers to fall in the late 1960s in line with the 18-year-old age group. Carswell draws special attention to government failure to assess the long-term implications of the 1962 Anderson Report on student awards which set the existing pattern for student means tested grants. The Anderson Committee saw itself as essentially a tidying up exercise and took no account of the likely expansion post-Robbins while

Robbins ignored Anderson's implications for the funding of higher education with the result that Government found itself committed to signing what Carswell, as an ex-Treasury man, calls "a blank cheque".

The book is essential reading for its account of the Robbins Committee at work, and particularly its assessment of Shearman's decisive minority submission. It throws new light on the background to Crosland's 1965 Woolwich speech on polytechnics and the binary line, and on the origins of the introduction of the overseas fee differential in 1966. (As in 1979 there was no consultation with the Ministry of Overseas Development or the Foreign Office before the differential was announced.) It also gives an assessment of the UGC's apparatus and thinking on various issues, which should provide much food for thought for the Croom Committee. It was, for example, the UGC's caution in resisting any general rise in fees, because it thought that it would lose its control over planning and that universities might take more students than it wanted them to, that was a contributory factor to the differential increase in overseas fees in 1966. The UGC maintained the block grant principle, he argues, partly because it was keen to protect institutional autonomy but also for its own self defence because if particular developments or subjects were earmarked "the Committee would run the risk of starting an avalanche of competing interests and new responsibilities which it was not equipped to deal with".

Perhaps the most salutary aspect of this account is the revelation of the power of the Treasury and of officials generally and of their attitudes to higher education. Carswell himself

may have been a less than wholehearted expansionist at the time of Robbins but the Second Permanent Secretary at the DES referred to by Carswell as the Universities of Noddlyland. Internal rivalries played their part in policy formation: the old Ministry of Education at Curzon Street prepared Crosland's Woolwich speech without consulting its newly acquired universities' branch still located near the Treasury in Richmond Square, where it shared offices with the office of the Minister for Science. The media also influenced decisions: the publicity occasioned by student radicalism in the late 60s and early 70s dealt a fatal blow to universities in the minds of ministers. Not only did "the bounce go out of the programme" but ministers stopped mentioning universities in the same breath as hospitals and schools in their speeches.

There is much in this book that confirms the premises of Heclo and Wildavsky's *Private Government of Public Money*. Apart from Lord Robbins, the views of educationists seem simply to have had no impact; only Crosland, among ministers, appears to have had views worth recording and Shirley Williams's 14 points rate no more than a cursory reference. The crucial decisions are always financial. The oil crisis of 1973-74 was "a crippling blow" and the Chancellor's announcement, made without consult-

Philip G. Altbach

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The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, England



John Carswell: insights into policy-making

BOOKS

Bohr's genius

Niels Bohr: a centenary volume
edited by A. P. French
and P. J. Kennedy
Harvard University Press, £16.50
ISBN 0674624157

In a rather curious respect Niels Bohr was one of the most remarkable physicists – indeed, one of the most remarkable scientists – of all time. His reputation and achievements place him alongside Einstein and Rutherford as an outstanding figure in 20th-century physics, one of the creators of our modern view of the physical world. Author of the quantum theory of the atom, guiding spirit of quantum mechanics and leading contributor to nuclear physics, his genius has been almost universally recognized.

But pick up almost any of his key scientific papers, especially those on quantum theory, and you will find therein a mass of vagaries, inconsistencies and outright contradictions, such as would condemn any ordinary scientist to obscurity. The very paper that established his reputation, and that established the familiar picture of the atom in terms of a series of quantum electron orbits, is logically speaking a fiasco, with the classical theories of mechanics and electrodynamics here accepted and there rejected, and with no apparent rules as to when or where.

So has the whole community of physicists been duped for the past 70 years? Hardly. If anything, Bohr's genius has been underappreciated. In the face of his obvious abilities, the inconsistencies and contradictions have been overlooked, forgiven. But it was in those very inconsistencies, and in the subtlety of thought underlying them, that his genius found expression. He did not fall foul of the usual rules by which scientists are judged, because his peculiar contribution to science transcended those rules.

Whereas most scientists are concerned with the relatively straightforward task of describing and theorizing about natural phenomena as they appear, using generally accepted concepts, Bohr was concerned with the much more difficult one of conceptualizing our knowledge of nature in terms he knew to be inadequate. Very early in his scientific career he recognized something that almost every other physicist of the period consistently shirked: that the subatomic world treated with the help of quantum physics cannot be described consistently in terms of the space-time concepts of visualization, characteristic of classical physics and of our ordinary everyday language. The effects of this recognition were twofold. On the one hand, Bohr moved scientifically ahead of his contemporaries, most of whom were still

bound by the old inadequate conceptualization. On the other, his scientific language, inevitably seemed contradictory when framed, as they had necessarily to be, in language.

A concern with the problems of language has of course been a dominant feature of 20th-century philosophy. But Bohr's concern with the inadequacy of language for the description of nature has been almost unique among practising scientists. And even for those who are not interested in the technicalities of physics per se, this makes him a particularly fascinating figure. Moreover, his ability to go straight to the fundamentals of a problem and his constant awareness of the inadequacies of human communication also permeated his life outside physical research so that this too acquires an interest above that of the typical scientist. And while the revolution in physics over which he presided was a highly technical affair, his own papers, focusing on broad conceptual issues, were often written in non-technical language. His role as a teacher and spiritual head of the physics community, his political activities in respect of the atomic bomb, and many other aspects of his life and work can all be appreciated without any deep knowledge of physics.

Capitalizing on this, this centenary volume is aimed at a wide audience. And while it is less likely to reach such an audience than the earlier Einstein centenary volume (also edited by A. P. French) to which it is a companion, it should be well appreciated by those whom it does reach. Perhaps Professor French has learnt from his experience with Einstein, or perhaps it is just a

result of the affection that Bohr has excited in all who have met or studied with him, but this Bohr volume is undoubtedly an improvement on its predecessor, itself a popular success. About 30 short essays by eminent physicists and historians, some reminiscent, others analytical, are interspersed with a selection of Bohr's own writings, while in the wide margins a large number of shorter quotations and excerpts provide a sort of counterpoint to the main text. The choice of contributors is excellent and appropriate, the choice of historians in particular being far better than one generally expects from scientific commemoratives. The articles themselves contain little that is new, but this is authoritative stuff and the overall standard is high. Although Bohr's concern with language is not perhaps given the emphasis it deserves historically, it is a difficult topic to discuss explicitly and one with which the historians themselves are still only slowly coming to grips. In all other respects, from Bohr's science to his philosophy, his personality to his politics, the coverage is thorough and sympathetic.

For those already familiar with Niels Bohr, this volume provides an enjoyable companion. For those who do not as yet know much about him and would like to learn more, it provides a pleasant and informative introduction.

John Hendry

John Hendry is author of *'The Creation of Quantum Mechanics' (Reidel, 1984)* and editor of *'Cambridge Physics in the Thirties' (Adam Hilger, 1983)*

Cold storage

Biophysics and Biochemistry
at Low Temperatures
by Felix Franks
Cambridge University Press, £25.00
ISBN 0521 263204

The stresses of environmental chilling and freezing are major ecological factors determining the natural distribution of microorganisms, plants and animals. Not only is the precise way by which organisms tolerate low temperatures in extreme environments such as polar and alpine regions of obvious scientific interest, there are also practical and economic aspects. For example, it has been calculated that a two-degree (centigrade) increase in the frost hardness of wheat would result in a potential increase in world wheat production of between 25 and 40 per cent. Similar figures apply to many other tropical and temperate crops.

Low temperatures are being used in an increasing number of applications in laboratory science. Indeed, storage in the frozen state (cryopreservation) is becoming a standard method for the

long-term maintenance of a variety of biological material. At the temperature of liquid nitrogen (minus 196 degrees centigrade) survival of cells is thought to be independent of the period of storage and biological systems are considered to be genetically stable. In addition, the destructive powers of freezing are used for the removal of warts and surface tumours and in the relief of pain. Finally, rapid freezing is used as a physical fixation technique in such ultrastructural studies as freeze-fracture electron microscopy.

As the vast literature on physical chemistry and biophysics at low temperatures and the effects of low temperatures on a wide range of biological systems is scattered throughout the specialist journals, it is inconceivable that a comprehensive review could be attempted by a single author. Indeed, in his introduction to this relatively short book, Professor Franks clearly states that this is not his out; rather, he hopes to "sketch the overlapping areas and disciplines must search for the solution to the many unresolved problems". Not only does this approach attempt to bridge the various scientific disciplines, it also tries to relate the response of biological systems to low temperatures in biophysical terms.

The first half of the book represents a concise review of the physical processes occurring during the cooling and

freezing of aqueous solutions and the effects of such changes on biological molecules. Here, Franks attempts to explain these often difficult phenomena with simple examples, useful diagrams and the essential mathematical analysis. A basic grounding in thermodynamics and physical chemistry has been assumed. However, although the behaviour of proteins at low temperatures is discussed at length in a 27-page chapter, the well-known phenomena of thermotropic behaviour and lateral phase separations in lipid bilayers and biological membranes are dismissed in three pages.

Part two deals with the effects of low temperatures on cellular systems, including freezing avoidance and resistance to freezing in natural environments, cryopreservation, freeze-fixation techniques for electron microscopy, and the technology of the frozen food industry. However, as these subjects are discussed from the perspective of the physical chemist rather than the biologist, this has resulted in an interesting if rather idiosyncratic review of the literature.

The section on vitrification provides an extremely useful definition of the terminology and a critical assessment of the various claims made in the literature. However, many biologists will consider the chapters on the response of cells to the stresses associated with freezing and thawing less satisfactory. A rather conventional approach has been taken, the human

erythrocyte/sodium chloride/glycerol system being used yet again as a typical example of what happens to cells during freezing and thawing. The recent literature on cell packing and unfrozen volume are ignored and there is no speculation on the effects of freezing and cooling on membrane-associated pumps, the phase behaviour of membrane lipids, or the integrity of the cytoskeleton. Surely the author does not consider that freezing injury can be analysed generally in terms of osmotic stress and ignore all the other phenomena he presents so clearly in the earlier sections, such as the change in pH of protein denaturation.

Although the author may have overestimated the average biologist's grasp of thermodynamics, most biologists working on the effects of low temperatures will find this book valuable, particularly for the initial chapters on physical chemistry. I know of no equivalent introduction.

G. J. Morris

G. J. Morris is a member of the scientific staff of the Culture Centre of Algae and Protozoa at the Institute of Terrestrial Ecology, Cambridge.

A paperback edition of Ruth Moore's book on Niels Bohr: the man, his science, and the world they changed has been published by MIT Press at 19.95.

satellite. Using active instruments, we can determine information about the bottom topography of the sea, the shape of the geoid, wave directions, wavelengths, wave heights, currents, and near-surface wind speeds.

Although the general coverage of the two books is very similar, there are some differences. Thus, Stewart devotes more attention to the basic physical principles of the methods and techniques and also includes valuable chapters on ground-based radar techniques for studying the sea surface. Robinson, on the other hand, includes some discussion of the principles of image processing.

Traditional methods of data collection are slow and tedious. Consider, for example, the determination of the temperature of the sea: data traditionally obtained from a few weather ships, from merchant shipping and naval shipping, from oceanographic cruises and from a few buoys are necessarily few and far between. As the Meteorological Office, in producing five-day mean sea-surface temperature charts for, say, the North Sea, may have to interpolate from only a few tens of temperature measurements, the resulting charts only show general contours and do not reveal fine detail. By contrast, a polar-orbiting, remote-sensing satellite can scan the whole of the North Sea in a matter of a

few minutes and give values of sea-surface temperatures on a grid with a spacing of about one kilometre and with a sensitivity of a small fraction of a degree Celsius. Thus, many fine details of the pattern of sea-surface temperatures can be revealed instantly, even though this would be extremely difficult or even impossible to detect by traditional methods. Moreover, such satellite scans are now made several times a day.

However, although satellites can provide vast amounts of data that were not obtainable before, I would not wish to suggest that these new techniques of gathering data from satellites will render conventional oceanographic cruise work obsolete; satellite data do have their drawbacks. For example, in the case of temperature, a cruise ship can take measurements of temperature versus depth, whereas the satellite is able to gather data only about the surface. Thus, satellite provide oceanographers with a valuable source of data which augments but does not replace conventional data sources.

Arthur Cracknell

Arthur Cracknell is professor of theoretical physics at the University of Dundee.

BOOKS

SOCIAL POLICY

Leaving behind consensus

Challenges to Social Policy
edited by Richard Berthoud
Clarendon Press, £17.50
ISBN 0566 050110

The Future of Welfare
edited by Rudolf Klein and Michael O'Higgins
Blackwell, £19.50 and £8.50
ISBN 0311 142037 and 140245

When the Beveridge Report was published, Harold Nicolson noted in his diary that "the Tory line seems to be to welcome the Report in principle, and then to whittle it away by detailed criticism. They will say that it is all very splendid and Utopian, but we can only begin to know whether we can afford it when we have some idea what our foreign trade will be like after the war".

Three decades later, Robson and Crick's symposium on *The Future of the Social Services* (1970) contained numerous warnings that welfare spending could not rise indefinitely and that the future goals required "considerable clarity of definition"; one contributor even entitled his essay "Which Social Services Can We Save?". The welfare state's existence has never been taken for granted, but it is really only since the arrival of the Thatcher Government that the rhetoric of crisis has become deafening.

The "crisis of welfare" appears to have two elements. First, there are the "objective" factors of fiscal crisis (social expenditure exceeding some agreed proportion of GNP), demographic change (particularly the increase in the elderly) and bureaucratic overload. Second, the crisis may be a political construct – part of a Thatcherite strategy to effect a revolution in

public attitudes (with, presumably, tangible long-term economic benefits). And, of course, the two elements interact: to view the elderly as a burden is to make a political statement.

Both of these volumes of essays arise from conferences on future trends in welfare, with supply-side considerations firmly in the minds of all participants: just what can we afford to spend, and on which alternative priorities, if economic growth continues to be poor? The result is two essay collections of mixed quality, in which contributors grapple with the problems of prediction – problems immediately made explicit by Richard Berthoud in the introduction to his volume. The welfare consensus may appear to be over but, he points out, a variety of factors make it difficult to see into the future: existing policies may contain a formidable weight of administrative inertia which inhibits reform; a sudden political crisis (not to mention the loss of a few marginal seats) could fatally weaken the new right's hegemony. Above all, economic influences are not under the control of social policy practitioners or pundits.

Berthoud's contributors clearly laboured under these difficulties, and found the crystal ball distinctly murky: Michael O'Higgins, for example, after a very useful survey of fiscal trends, can only suggest that the watchword in future will be "creativity within constraints". Hence the Berthoud essays are better read as recapitulations of current issues than as exercises in prediction – as in Robert Pinker's survey of the impact of family policy and social services, or in Alan Walker's characteristically spirited account of the complexity of influences that dictate the scope of community care for the elderly. Judged in this light, the best contribution is probably Alan Maynard's elegant essay on how performance indicators and efficiency incentives can be applied to health care. In a concise yet wide-ranging discussion, which should be read by all social policy undergraduates, Maynard leads the reader gently by the hand through the maze of policy, strongly in the last ten years, such as measurement by "quality adjusted life years", the fiscal implications of demographic trends and the disciplining of professional empires.

The Future of Welfare is a more ambitious collection of essays by a wider range of authors and, probably

detected the conflict of values to which the welfare state gives rise in the first edition of their book published in 1976.

Mishra joins them in identifying two extreme positions, those of the new right and the Marxists, and both books succeed in highlighting the points where the extremes meet. But whereas George and Wilding distinguish between "reluctant collectivists" like Keynes and Beveridge and Fabians like Crosland and Tawney, Mishra lumps the two together under the heading of social democrats. Mishra's fourth alternative is the ideology of corporatism particularly as practised in Austria.

As summaries of the political positions in question, both books are competent and reasonable. Inevitably, subtlety is lost whenever schools of thought are constructed from the pens of different authors, and occasionally the emphasis is wrong. For example, reading the summaries you would not get the impression that Hayek and Friedman differ considerably in their understanding of economic methodology and you would miss Crosland's sharp disagreement with Tawney over occupational pensions. Moreover, Mishra is particularly unfair on Hayek in accusing him of missing the significance of the Nazi rise to power. One may disagree, as I do, with Hayek's valuable treatment. Social scientists describe this as a breakdown in the postwar political and economic consensus.

Both of these books offer an extended account of the various views that are now prevalent among intellectuals and the political elite. As we know, the welfare state still remains popular among the mass of citizens in western democracies (again the parallel with sex holds). However, among writers and commentators doubt and uncertainty about its effectiveness and fairness have grown, even among those whose political affiliations might be thought to confine them to a basic sympathy with the ends and means of the welfare state. George and Wilding can claim some credit for having

because of that, it illustrates more strongly the strengths and weaknesses of examining the fiscal/demographic aspects of the welfare crisis while ignoring the political/ideological. For while Rudolf Klein and Michael O'Higgins promise in their introduction that their aim is to demystify the notion of crisis, the whole approach of the book seems to be managerial rather than ideological – an impression that is confirmed for the reader by Klein and O'Higgins's deplorably weak conclusion in which, after wading through an ocean of clichés, they recommend that future policy should be based on "purposeful opportunism". Only Peter Taylor-Gooch explores different perceptions of the crisis by re-presenting his interesting work on public attitudes that has appeared in book form elsewhere.

However, the book does have an original and very welcome central theme, pursued by several contributors – the relationship between social policy and the demands of the labour market: hence, for example, John Ermisch looks at demographic trends and future labour market needs; and Martin Rein makes the intriguing suggestion that the "social welfare industry" has been an important source of jobs (of a particular type) for women. Again, there are immensely useful essays summarizing public expenditure trends from David Cameron, Colin Gillon and Richard Hemming, and Michael O'Higgins and Alan Paterson. Clearly we need to know, with the aid of well presented, good empirical analysis like this, what have been the main trends between different public expenditure sectors and social services, or in Alan Walker's characteristically spirited account of the complexity of influences that dictate the scope of community care for the elderly. Judged in this light, the best contribution is probably Alan Maynard's elegant essay on how performance indicators and efficiency incentives can be applied to health care. In a concise yet wide-ranging discussion, which should be read by all social policy undergraduates, Maynard leads the reader gently by the hand through the maze of policy, strongly in the last ten years, such as measurement by "quality adjusted life years", the fiscal implications of demographic trends and the disciplining of professional empires.

After all, part of the crisis of welfare is the fact that the new runway at Farnborough has priority over raising child benefits.

John Macnicol

John Macnicol is lecturer in social policy at Royal Holloway and Bedford New College, University of London.

Welfare in a declining economy

Identity and Social Welfare, revised edition
by Vic George and Paul Wilding
Routledge & Kegan Paul, £4.95
ISBN 07102 02776

The Welfare State in Crisis: social thought and social change
by Ramesh Mishra
Wheatshaf, £18.95 and £5.95
ISBN 07108 02044 and 020471

Once upon a time the welfare state was the sex – not a subject for conversation in polite or civilized company. Of course, like sex, people knew it was there in the background, but they did not feel that it raised issues that needed extended public attention. But just as the permissiveness of the sixties made sex a suitable topic for conversation, so the chilly economic climate of the seventies and eighties made the welfare state seem a case for equally valuable treatment. Social scientists describe this as a breakdown in the postwar political and economic consensus.

Both of these books offer an extended account of the various views that are now prevalent among intellectuals and the political elite. As we know, the welfare state still remains popular among the mass of citizens in western democracies (again the parallel with sex holds). However, among writers and commentators doubt and uncertainty about its effectiveness and fairness have grown, even among those whose political affiliations might be thought to confine them to a basic sympathy with the ends and means of the welfare state. George and Wilding can claim some credit for having

we can see that, although there was a consensus on the state's well being for its citizens, there was far less agreement on whose job it was to provide goods and services above that minimum. Conversation about social policy could be risqué even then, and if we look at the areas of disagreement, for example earnings-related pensions, we see that these are just the issues that cause controversy nowadays.

Second, the relatively rapid increase in public spending on social welfare in the postwar years – not antipathetically involving growth rates twice as high as the growth in national incomes, had to mean that questions would be raised about the political priority that should continue to attach to social welfare. No government of whatever political persuasion is going to relish the thought of some areas of the public budget growing indefinitely at twice the rate of other areas. Third, the controversy about the welfare state all too easily becomes confused with controversy about the causes of Britain's comparative economic decline. As that decline has accelerated in recent years so the functioning of the welfare state has come under increasing scrutiny.

Is it possible to evaluate the merits of these different views? Both books try in different ways. Vic George and Paul Wilding mainly on British experience, drawing mainly on British experience, Mishra is more eclectic. Indeed in probably the most useful discussion of the book Mishra sketches the corporatist arrangements in Sweden and Austria which have enabled these societies to maintain a high commitment to welfare during the economic recession. Certainly the experience of these countries and others must be relevant in judging whether the welfare state really is in crisis and if so what should be done about it.

Albert Weale

Albert Weale is professor of politics at the University of East Anglia.

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BOOKS

SOCIAL POLICY

Uses for a probation service

Social Work, Justice and Control
by Peter Raynor
Blackwell, £19.50 and £9.95
ISBN 0 631 13731 9 and 13732 7

The heady expansionist days of the English probation system of the 1960s when hopes were high for the scientific rehabilitation of offenders have long departed. For a time at least the supposed reformative effect of probation came to be seen by policy-makers, probation officers and at least a good proportion of sentenceers in the criminal courts as the main justification for its use. Now that the bubble of rehabilitative optimism has burst a central problem of the modern probation service is to find a plausible justification for its existence.

Peter Raynor begins his book with a useful examination of this collapse of confidence and goes on to review the alternative visions of the probation service which have since arisen. These he splits into "separatism" (caring and controlling functions are split between two agencies), "controlism" (a clear identification with punishment and control in the community), "radicalism" (an attempt to develop Marxist practice), "sentenced to social work" (supervision and surveillance with help on offer), and "non-treatment" (social work service for offenders without the promise of treatment for crime).

Raynor favours the last mentioned but, as he rightly says, it poses a crucial question: "how can social work be provided within the criminal justice system in a way which is not only helpful to offenders, but also improves the quality of criminal justice from the point of view of other significant parties as well as offenders?" Controlism, Raynor suggests, "seeks to substitute system goals for offenders' needs, and radicalism does the reverse; the problem is to articulate a practice which goes some way to meet both kinds of need". It is that, very largely, to which the second part of his book is devoted.

There are two main strands in Raynor's argument. First, he thinks social work should reassess the value of persons as ends in themselves rather than as simply means to be employed

in the pursuit of some transcendent instrumental goal; and this leads to replacing coercive "treatment" with "increased people's sense of identity and responsibility". This is not to suggest that the wishes of offenders would never be overridden by probation officers, but rather that the task for doing so would be the interest of others rather than some paternalistic "immaturity" on the part of the offender.

Secondly, Raynor envisages a major role for the probation service in negotiation, dialogue and problem-solving which would extend to the service role in the courts. No longer would probation officers recommend eagerly devised "treatments" for offenders rather they would "offer" a range of non-custodial options, preferably based upon negotiation between offender, offender and victim.

Apart from one far-fetched chapter on "scientific probation" this is a well sound and perceptive analysis of what prescription for the probation service, which finds a plausible middle way between controlism on the one hand and the radicalism of the Marxist theoreticians on the other.

William McWilliams

William McWilliams is a research fellow at the Institute of Criminology, University of Cambridge.

Political debates in nursing

Political Issues in Nursing: past, present and future
edited by Rosemary White
Wiley, £9.95
ISBN 0 471 90800 2

As 1986 unfolds, nursing and politics are becoming increasingly and, some would argue, explosively mixed. The current campaign by the Royal College of Nursing for "nursing to be run by nurses" is likely to give way to a wider debate about the future of the profession with the publication of the major reports by government and the professional nursing bodies.

While *Political Issues in Nursing* does not address these debates directly, it is centrally concerned with the issues which underlie them. Its response is in the form of both a political analysis and a political education. The book's express purpose is to enable the nursing profession to understand the political structures which shape it. The editor argues for a "more sophisticated and widely understood" by nurses, and the six chapters of the book seek to provide it.

The opening chapter, on the evolution of policies governing visiting times in hospitals, is a gentle introduction. Chapter two plunges into a more central and complex political arena. In a characteristically straight-talking chapter, Rosemary White reviews how conflicts between the different interest groups within nursing have acted (and have been exploited) to undermine the development of nursing as a profession. The two chapters which follow look at two professions within nursing who have lost both status and autonomy in this postwar struggle.

Jean McIntosh examines the position of district nurses. In a detailed chapter, she argues that because nursing has become synonymous with hospital nursing, district nurses have been left without a political base within policy-making. Jane Robinson's chapter is concerned with how health visiting has defined the concept of health and the way in which its individual-blaming definition prevents it both from fully addressing the health needs of the population and from developing a viable professional identity.

The final two chapters review the position of nurses in the USA. Nancy Milio examines the effects of the Government's attempts to contain the cost of public health care on the working conditions of nurses and the health of patients. Kalish and Kalish complete the volume with a history of collective bargaining and strike action among American nurses.

The editor's introduction is not completely successful in weaving this diverse material together. Nevertheless,



less, the volume works well, both at the level of political analysis and education, because it is written by and for the nursing profession. This gives it both an accessibility and a sense of relevance which is often lacking in accounts written by those studying nursing from the outside. While not for beginners, it presumes considerably less by way of historical knowledge and sociological understanding than similar volumes from social scientists. The authors do not balk at simplifying the complex process of history, which, while not without its problems, enables them to link the past with the present and leave space for an analysis of the future. In this way, the book discusses many important and controversial issues: the growth of private nursing and part-time employment for

nurses, de-skilling and the changing relation between community and hospital nursing, the role of the press in shaping public debate about nursing and most centrally, the question of how the profession should define and defend itself.

Political Issues in Nursing is unlikely to be read cover to cover. But even its audience with the feeling that it is understanding more about the debate surrounding the future of nursing, they have also joined it.

Hilary Graham

Dr Graham is head of the department of applied social studies at Coventry (Lanchester) Polytechnic.

After Beveridge

Social Insurance in Transition: an economic analysis
by John Creedy and Richard Disney
Clarendon Press: Oxford University Press, £20.00 and £8.95
ISBN 0 19 877228 9 and 877227 0

Major changes have taken place in the social security system in the UK since Beveridge proposed his social insurance scheme in 1942. Although a variety of benefits have been introduced, the social insurance scheme still accounts for a considerable proportion of social security provision. *Social Insurance in Transition* concentrates on three areas of social insurance: pensions, unemployment and sickness.

The authors' concern is not to provide another "blueprint" for reform but to conduct an in-depth economic analysis of a much criticized system which could serve as a basis for more informed discussion.

The main economic arguments for state social insurance provision are outlined and from this a set of economic criteria is derived; this is then used to assess pension, unemployment and sickness insurance schemes operating

in the UK. Every effort is made to examine the consistency of a scheme within its own terms of reference. Creedy and Disney show convincingly that the state earnings-related pension scheme, which was one of the few innovations introduced for its redistributive content, has in fact very little redistributive potential. When the earnings-related scheme, which has been severely criticized recently, is analysed within the context of the established criteria it falls to meet most of them. However, the authors are reluctant to recommend abolition due to insufficient evidence about financial requirements in the future. They consider that a comprehensive analysis of the financial and redistributive implications of any proposal to reform the state pension scheme should be a prerequisite for public debate.

The provision of unemployment insurance by the state is shown to be inefficient and inadequate. Creedy and Disney suggest that the relevant criterion for unemployment benefit should be "availability for work" rather than the level of contributions or the length of time unemployed. They argue that with the abolition of the contribution requirement there is a strong case for financing unemployment benefits from general taxation. Proposals already exist for the removal of the contribution criterion from the sickness and invalidity insurance

continued opposite

BOOKS

SOCIAL POLICY

Welfare's true nature

Social Problems and Welfare Ideology
edited by Mick Manning
Gower, £19.50 and £9.95
ISBN 0 566 00938 2 and 05067 6

Constrained by the self-imposed requirement to ground its explanations - "in the last resort" at least - on class conflict, Marxist analyses of the welfare state tend to oscillate between two opposing positions. The first presents social legislation as a victory for working-class struggle, the second as a ploy designed to "legitimize" the state in the long-term interests of capitalist accumulation. There being not much evidence for the former proposition, it is the latter which has tended to occupy the attention of modern Marxists and, in particular, its need for an adequate theory of ideology with which to explain the legitimizing process. It is this need which *Social Problems and Welfare Ideology*, a series of theoretically linked essays by members of the social policy department of Kent University, has endeavoured to meet.

The Marxist sting, however, comes only at the tail end of Manning's cleverly organized book. The first and, in my view, most satisfactory chapter limits itself to the establishing of a preliminary sociological case for the assertion that social problems are "socially constructed". Here Manning argues that the definition "of (objective) social conditions as social problems" typically occurs through (subjectively) perceived grievances being organized into claims which various interest groups bring to the state. The legitimacy of these claims is heavily mediated by mass media interpretations of public opinion and (ultimately) by the cultural assumptions of government.

There follow chapters on violence against women, race, madness, delinquency and unemployment, each of which is designed to show how this process operates to present a "conventional" understanding of the nature of these social problems. In terms of the limited thesis of the first chapter there is much sound, if not wholly original, work here. But Manning, as a Marxist, wants to go much further and to claim that these "conventional" understandings are, in fact, ideological and thus either partial or simply false.

Principal villains in the transmission of ideological distortion are the language typically used by the media and the structural attributes ascribed to the statutory services. Following Kramer, she is critical of the over-simple claims made for the voluntary sector as innovative (for many bodies a feature of their foundation rather than of their continuing history), cost-effective (there are telling comparisons with Holland and the USA), and participative. She might have strengthened this last point by considering the organizational factors which keep apart the active staff and executive committee from the passive members, who are tolerated by the organization for their fund-raising and legitimating roles.

Having, rightly, demonstrated the limitations, ambiguities and at times romantic wooliness of the welfare pluralist position, notably in its failure to recognize any social class implications, Manning sets out her own ideal policy model. She differentiates three main areas of voluntary activity: service provision, self-help groups and pressure groups, and suggests that the statutory sector should relate to each area separately. It would continue to provide the majority of services, with the voluntary sector contributing (for the physically handicapped for example), and acting as a "buffer" for these minority groups. Statutory and voluntary sectors alike need to develop a more responsive, participatory mode of operation, but this will come about through redressing unequal power relations in society, rather than by transferring responsibility for welfare from one sector to another.

The book is part of the Longman Social Policy in Modern Britain series, and suffers somewhat from the text-book format. Although she always lists them into her main argument, there are a lot of ground-clearing accounts of reports, different Manpower Services Commission schemes, government initiatives and so on, particularly in the final early chapters, whereas in the more section the argument becomes more incisive. It is perhaps in this area that a shortage of literature in this area that so much has to be crammed in and explained; ideally I would see a place for a more basic introductory text, allowing Brenton to write a sharper account of her main argument.

Much of the argument may already have been passed by a government which, disappointed in the cost implications of the voluntary sector, is now looking more to the informal and non-commercial sectors (the natural home of the new right, if not of traditional Tory paternalism), and certainly future studies must bring these into the discussion of overall social policy patterns and objectives. But Brenton has made a serious case for the inclusion of the voluntary sector in mainstream debates on social policy, and with a book of this quality there is no excuse for voluntary organizations to remain an optional addendum to social administration courses.

John Lansley

John Lansley is lecturer in social studies in the department of continuing education at the University of Liverpool.

the neutral vocabulary of "experts", the sort of knowledge employed by social scientists in their analyses of social problems and the social policies enacted by the state. Collectively, these produce a "conventional" or "common-sense" perception of social problems (that "madness" is an illness, for example) which is divorced from their true economic and class origins. Moreover, the welfare state is itself the site of class struggle (Manning is no "relative autonomist"). "The welfare state strives in reality to suppress or contain class conflict to the advantage of the dominant class or gender by presenting itself in appearance as precisely the opposite - the defender of the rights and needs of the working-class."

Much of Manning's case is a response to a debate narrowly confined to Marxist premises. But even within this limited frontier it seems vulnerable to the criticisms made of the dominant ideology thesis by other Marxists, notably Abercrombie and his recent book of that name. Even if it is possible to define coherent dominant ideology, Abercrombie argues, there is powerful empirical evidence to show that the working class have not incorporated it. Manning may feel that the emphasis his theory places on the role of the media and language does enough to absolve him from these criticisms; if so, it is a matter on which only Marxists are

A place for a voluntary sector

The Voluntary Sector in British Social Services
by Maria Brenton
Longman, £6.95
ISBN 0 582 29600 5

It is nearly ten years since the Wolfenden Report on voluntary organizations was published, and twenty since the American War on Poverty's emphasis on participation gave a new lease of life to volunteerism. Since then the National Council for Voluntary Organizations, eager to promote a highly visible voluntary sector, and academics associated with Wolfenden pluralism, have associated the concept of welfare pluralism, while the new right, for very different ideological-economic reasons, has laid claim to some of the same ground.

It is in this context that Maria Brenton has written her trenchant book. Her main theme is that both welfare pluralists and new right politicians criticize centralized, bureaucratic, professionalized state services, and wish to see them replaced by a greatly enlarged voluntary sector (with or without government funding). But, she asks, would not such a transformed sector take on in the process many of

scheme. The authors support the proposal which would make eligibility depend on medical certification and assessment rather than contributions but argue that further research is required particularly with respect to the cost of such reforms. As with unemployment, the financing of these benefits from general taxation is suggested.

The final part of this book is concerned with the tax-and-transfer system as a whole. Tax structures are considered only in so far as they are interrelated with the provision of social security benefits. The section begins with an analysis of alternative social security schemes and concentrates on two rather stylized schemes, namely the negative income tax and social dividend, and the minimum income guarantee. Recent proposals for similar fully integrated social security systems are examined. This is followed by an analysis of the actual tax-and-transfer system operating in the UK. The authors examine the interaction of the income tax and national insurance schemes and show how it introduces a non-linear element into the rate structure of personal income tax which increases the complexity of devising revenue-neutral tax changes. The distributional effects of various tax functions are also explored.

When comparing various tax-and-transfer schemes Creedy and Disney assume that total income and the

J. F. Bradley

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qualified to judge. Non-Marxists will want to ask a more "conventional" question: if the dominant ideology distorts the true nature of social problems, then what is their true nature? Here the answers are generally unsatisfactory. Take "madness" again. It is one thing to show how the public perception of this state as an illness has been powerfully influenced by the medical profession. In its own interests, and backed up in this by the state. It is quite another to claim that this perception is ideological and thus false. What is madness if, as the authors assert, it is not an illness? To simply recategorize it as a form of deviance, as they do, is hardly a compelling diagnosis, particularly in the light of current medical research.

As an account of the processes through which social problems are "socially constructed", the book contains much that is useful (Jan Fahl's essay on violence against women is particularly illuminating in this regard). As a theory of ideology, however, and despite a certain sophistication, the "answers" it provides merely serve to beg a further set of "conventional" questions.

David Dale

David Dale is a social worker for Westminster City Council.

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Edited by E. De Boer, Delft University of Technology, The Netherlands

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Max Brammer is head of the school of computing and information technology at Thames Polytechnic, and a committee member of the British Computer Society's specialist group on expert systems.

What price the word box?

Rodney Barker voices concern about the power of the word processor to alter departmental life

Machine breakers are often far-sighted men and women. And those who take a pick axe, or at least a pen, to the word-processor screen are not mere luddites who would soon have all their back sharpening quills. There are good reasons, which can be calmly and rationally stated, for worrying about the risks which word processors can bring to health, jobs, or peace of mind. In many institutions of higher education, however, mentioning word processors is like mentioning some popular hero. The room straightway divides into idolaters and image breakers, and a small collection of metal and plastic has to carry the weight of a carnival of professional hopes and fears. Word processors will double your output, even triple it. You will achieve unthought-of mastery of your records. You will be diverted from true scholarship and pedagogy into the time-consuming search for the perfectly presented copy. There is so much evangelism and jeremiad, that it is difficult to detect what difference, in practical terms, the arrival of the word box will mean to the life and organization of a department and the people in it.

The immediate and obvious consequence of the introduction of machines into weaving was the speed of the mechanical operation and the production of textiles. But far more important were all the new relations of employment, power, and the location of factories and homes which followed. And it is the same with information technology. New machines do not simply make jobs easier; they can abolish so many tasks and skills that existing jobs and the people who did them become redundant.

What are the possible consequences of a wide use of word processors in higher and further education? What happens when you use word processors? I don't mean what happens to your books and your articles and your files, but to your time, and to the time and the jobs of those who previously typed your letters and articles and reading lists, looked after your files, and revised your curriculum vitae. Is the word processor a threat to the jobs of secretaries or will it cut out the dreary bits of their jobs, allowing them

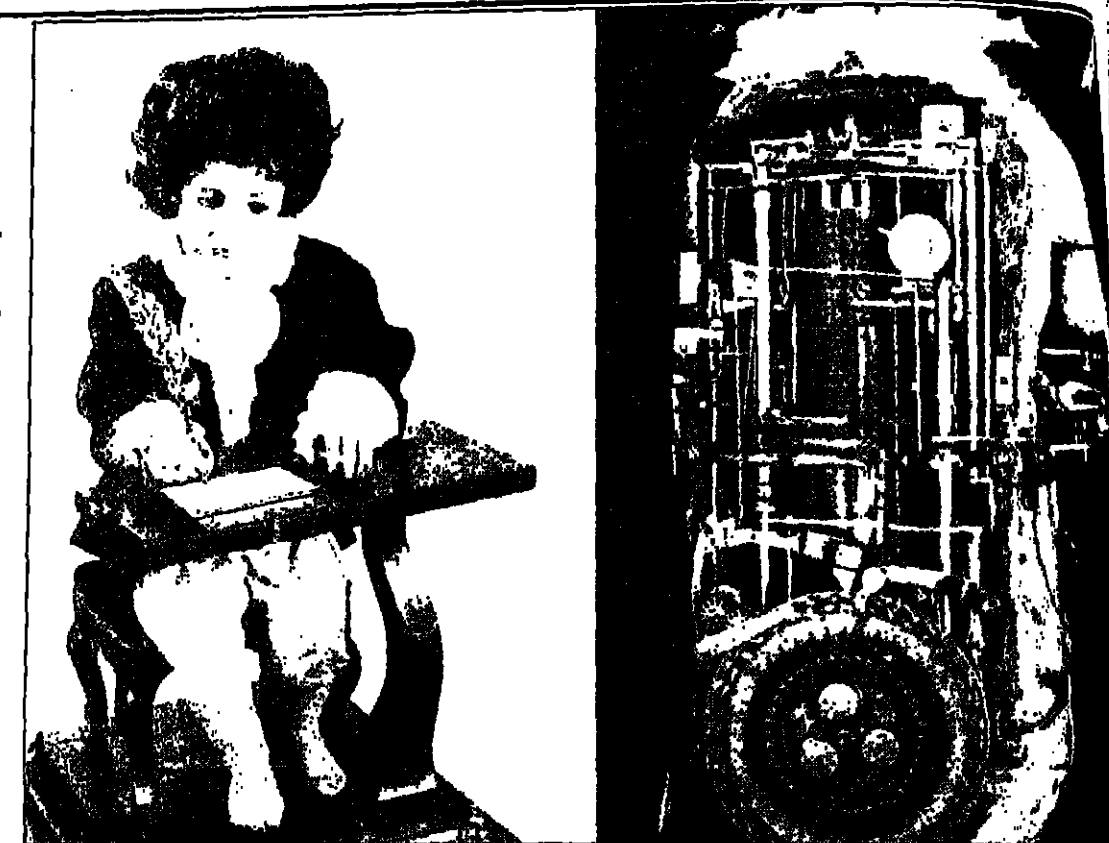
to do other things. What are the various possible consequences of the widespread use of the new machines for the distribution of power, prestige, and work?

Word processors sort and store information in a neat and manoeuvrable way, and they present anything that is written or tabulated or drawn with the clarity and perfection of finished final copy typing. The tasks which they do are ones which, if performed previously at all, would have been carried out by secretaries or research assistants. These tasks can now be done in a way which cuts out all the intermediate stages between the first thoughts of the academic and the last page of perfectly typed justified text. The amount of work which the academic needs to do is no greater than he or she would previously have expended on scribbling all over a secretary's finely typed draft, instructing his or her research assistant on the categories to be used in the sorting of references, or dictating or handwriting a letter, article, or reference.

Word processors cut out the middle-man between the academic thought and the administrative or scholarly act. And just as the replacement of steam by electricity meant that factories could disperse, so the word processor and its ever-smaller and more capacious discs means that work can be done anywhere there is a machine. When the student records of an entire department can be stored on a plastic card, then administration no longer has to be done in an office. Even bureaucracy is liberated from the bureau.

It might seem that I am claiming that word processors make secretaries redundant. They do not, but what they do do is to make unnecessary — and slow and inefficient by comparison with what the machine can do — several of the tasks which have traditionally taken up a lot of secretaries' time. You might suppose therefore that both teachers and secretaries would welcome the change. Many of them do not. For secretaries there is the apparent threat of redundancy; for teachers, the loss of personal prestige or status.

There is a loss of a particular sort of



Under the control of a set of pegs in a plate in his back (right), this 18th-century Jaquet-Droz doll can write any sequence of 40 letters. He dips his pen into the ink and follows the writing with his eyes, his wrist being controlled in three axes to give more subtlety to the writing. From Richard Stevens's *Understanding Computers: a user-friendly guide* (Oxford University Press, £12.50).

male prestige when people have to do their own tasks and lose the ego stroking that goes with having trivial things done for them. And of course the majority of prestige in academic life is male. Not all the tasks which secretaries perform for academics are directly related to efficient teaching or research. And if secretaries are replaced by machines, who is there to sustain the little male rituals of self-importance? Can a word processor make your coffee or call you sir?

One tedious task that many teachers pass over to secretaries is the annual revision of teaching material. Last year's handouts and reading lists, with this year's alterations scribbled in, are re-typed in a neat new version. The advantage of word processors is that in the time it takes the teacher to amend the original in hand, he can amend it on his word processor, and save his secretary the chore of re-typing the whole lot. But I have come across teachers who have praised the introduction of machines because it will enable their secretaries to turn their scribble into script more easily. There follows either a share in a secretary or a personal computer and a much smaller share, then one consequence could be fewer secretaries.

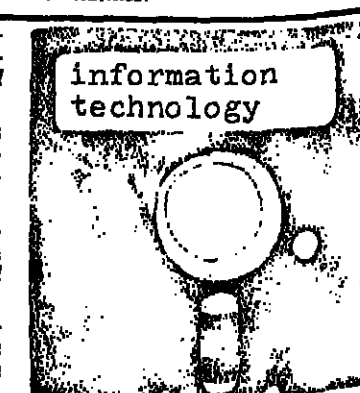
The corollary of the introduction of technology ought to be the liberation

of skills and opportunities. In the case of universities and colleges, that has to mean the skills and opportunities not just of the academics but also the secretarial and clerical workers. Training opportunities and the expansion of the scope of existing jobs to take in wider and more interesting administrative skills could make things a lot better for secretaries and clerical staff.

Word processing and computers are only technology. Although they can be used in sensible ways, they can also be used in silly ones. They can create jobs; and they can destroy or distort them. There are many offices where rank on rank of underpaid women sit in front of a screen all day punching in information.

A word processor is a machine, not a way of life. You may choose not to use one, but you will not thereby prevent others from doing so. Nor will you thereby prevent their use from affecting the environment in which you work. But they can affect it in a great variety of ways, and that is something over which anyone can and should exercise a choice. If they don't, someone else will do it for them.

Rodney Barker is senior lecturer in government at the London School of Economics.



information technology

● Wiley has published a second edition of Miles E. Walsh's *Understanding Computers: what managers and users need to know* at £29.15.

● Macmillan has published Dennis Lowery and Michael Shain's *Understanding Microcomputers* as a Macmillan reference paperback at £5.95.

● Technical Press (Gower) has published Peter Brophy's *Computers Can Read: machine-readable codes and their applications* at £17.50.

● Frances Pinter has published a collection of articles on *The Information Explosion: the new electronic media in Japan and Europe*, edited by Mick McLean, at £17.50.

● Oxford University Press has published a second edition of *Dictionary of Computing* at £17.50.

● Taylor Graham has published the proceedings of the Institute of Information Scientists' 'Text Retrieval '84' conference as *Text Retrieval in Context*, edited by Robert Kimberley, Catherine D. Hamilton and Christine H. Smith, at £15.00.

● Croom Helm has published the posthumous papers of Colin Cherry as *The Age of Access: information technology and social revolution*, compiled and edited by William Edmondson, at £19.95.

● Prentice-Hall has published *Computer Speech Processing*, edited by Frank Pallside and William A. Woods at £39.95. Based on an advanced course at the University of Cambridge in July 1983, the chapters have been grouped into five sections: phonetics (the nature of speech sounds); speech analysis and synthesis; speech recognition; linguistics and language processing; and speech synthesis by rule.

A stream of electronic bits

Adam Hodgkin reviews a new guide to the revolution in publishing technology

Many authors now write at a computer terminal. Many others must have considered whether they should switch to writing with a word processor. *Word Processing and Publishing: some guidelines for authors*, a 24-page booklet compiled by Peter Denley for the British Academy and the Office for Humanities Communication at the University of Leicester, contains valuable advice for the scholar contemplating the use of a word processor in the writing of books or articles. It will be helpful to the novice, but it also contains succinct advice that will be of interest to the computer expert.

The principal topics covered are: "Why an electronic manuscript?", "The author and the computer", "Preparing the text", "Delivering the manuscript to the publisher", "The author and the publishing process", "Author typesetting", and "Journals". There is also an intriguing coda on "Other forms of publishing". The common-sense approach of the booklet is evident from the advice on the possible reasons for choosing to write a book on a computer. We are a long way here from the hype of the computer salesman or technology freak: authors should not bank on substantial cost savings, greatly increased publication speed, or the painless achievement of literary goals. Computers revolutionizing the writing and publishing process, and in this era of personal computers the revolution often starts on the writer's desk.

Authors find the word-processing microcomputer a very attractive tool which they are inclined to accept far more readily than their grandparents took to typewriters. In addition, any computer can in principle function as a remote terminal for inputting to a typesetter, and the introduction of low-cost laser printers will soon offer writers a high quality, desk-top typesetting option. Such powerful new technologies on the writer's desk are making a practical monopoly that has lasted 500 years. The mysteries of the printer's art are no longer the preserve of a skilled and capital intensive business.

Not all changes, however, are for the better, and some of the advantages come at a price. Designers and composers in the printing factory do much more than simply retype the author's text. One of the dangers of the new technology is that the quality we expect in printed material will be lost. Books will not be proof-read so carefully, and they may not be designed at all.

Moreover, the author who gets the most out of the new technology will often be assuming far greater responsibility than was his under the old dispensation of the typewriter and hot-metal printing. Publishers and printers find themselves in the role of advising authors on the preparation of their texts and will be increasingly concerned to encourage standardization in the coding and processing of texts which are to be published. One might say that the modern author or scholar is only incidentally required to produce a typescript (often still enigmatically referred to as a manuscript, although most publishers would be appalled if their authors submitted books in long hand). What the publisher really wants from his author is a book or a text, which is now more often than not a stream of electronic bits rather than an arrangement of ink on paper.

In the short term, the cost savings will not be dramatic. Indeed, Denley suggests that one of the main benefits of the new technology will be that more books are published, rather than that there will be any absolute reduction in the price of books; but it should

be easier to publish books of a more specialist nature. Denley also points out that the typesetting charge is but a component of the production cost of a book, and the production cost itself is a small proportion of the published price. The author who buys a computer in the expectation that his book will be significantly cheaper to readers is due for disappointment. The best reasons for choosing to write on a computer are that, for the author, word-processing techniques have many advantages over the typewriter in the creation of texts.

The booklet is also realistic about those features of book production with

which most authors cannot yet expect much computer assistance. Tables and mathematical symbolism still present authors, printers and publishers with difficulties which are not easily solved in electronic production methods. Computers are in many respects ideal for indexing and cross-referencing, but it is not easy to link codes in an author's microcomputer to the output and format of a commercial, computerized typesetting system.

Time and again in reading the booklet, I was struck by the fact that most word-processing systems are designed primarily for the production of correspondence and typed business documents. Harnessing this business technology to the rather subtler interest of scholarship and the requirements of literary texts is not simply a matter of automation.

A publication of this kind is bound to date; indeed, the author has already been overtaken by events, as for many British authors the Amstrad word processor will now be an obvious first choice. But this is not mentioned in the text; moreover, it falls into two categories (the "small home computer"

and the "dedicated word processor") which authors are cautioned to avoid. No advice can be insured, however, against the advances of microcomputing technology. Indeed, in five years' time, authors and scholars will need advice on different matters in relation to computing. Simple word processing should by then be a background technology and scholars will need guidance on the databases, computer-generated concordances, and telecommunications networks tantalizingly mentioned at the end of the booklet. As a consequence of the increasing power of microcomputers, scholars will then certainly be facing new opportunities and challenges from information technology.

Advances are being made on three broad fronts: increasingly flexible software at the man-machine interface; much more powerful communications and networks which will link widely distant computers; and dramatic increases in the capacity of local or distributed memory. This last tendency alone will challenge the creativity of the literary scholar. Five years ago we could think of word processors as

electronic typewriters with a memory sufficient to edit and write a chapter or two. They seemed to be an extension of the technology of writing, the modern equivalent of the pen or the typewriter. Nowadays, however, you can purchase a microcomputer with a laser disk which holds a bibliographic record of one million books in the Library of Congress or the text of a multi-volume encyclopedia, so that it may well be that we shall need to be thinking about personal computers as an adjunct to the scholar's library.

A technology which was introduced in the context of writing and creating texts will become increasingly important in the context of writing and creating texts. This booklet provides an excellent introduction for those scholars learning the literary uses of computers through word processing. It is well designed and produced — acting as a good advertisement for the methods it gently advocates.

Adam Hodgkin is research and development manager of Oxford University Press.

Millions of papers have been written on Apple. (One was even written about it.)

"A Revolution in Academic Publishing" is not, we're pleased to say, manufacturer-speak. It's the title of a paper by Roger Emeny of Reading University. And as befits a treatise on the uses of Apple computers in education, it was entirely composed on and printed out by one.

Those uses are as varied as the subjects being studied in British schools and universities today where once computers were confined to the Computer Studies course.

A learning tool. At Newcastle Polytechnic, Apple computers have been introduced into the BA (Hons) Accountancy course. By learning the techniques of computer-based financial modelling with software used in business today, students are combining academic study with a preparation for work.

Says Senior Lecturer Adrian Woolley, "I am very impressed with the Macintosh ease of use and the quality of the software available... I see it as a very advanced productivity tool."

The Humanities or the Sciences. The same polytechnic is applying computers to the study of Materials Engineering, Acoustics Research and Power Engineering. For instance, students have been writing programmes for the design and testing of components.

Other examples of disciplines where our products are proving valuable include those of Earth Sciences and Psychology at the Open University. Cambridge has several Apple IIs in its Surgery and Ancient Greek departments. Reading University uses them to study French and Typography. And staff at Glasgow University find the Macintosh's graphics capabilities particularly relevant for Typographic Studies.

Apple's obvious strength in the area of word-processing is not being ignored. Donald Halliday of Newcastle Polytechnic, provides a classic example. On top of all his teaching work, Mr. Halliday is also Warden of a Hall of Residence. He explains: "I keep all my records for the Hall on (an Apple II)... I can do 90% of my day-to-day work on it, and find the word processing module very easy to use."

Many other professors are finding computers useful for preparing their course materials so as to replace expensive, quickly out-dated textbooks. The portability of Apple computers has been seized on by a Professor of the Imperial College. He takes his Macintosh home in order to compose term papers in the strictest secrecy.

And where budgets for administrative staff are restricted, an Apple can often be found, enabling a single secretary to discharge her duties efficiently towards many lecturers.

Easy to learn. Much has been said about the simplicity of learning to use an Apple computer and its software. According to Adrian Woolley: "If you give students the tutorial manual and demo disk, it is largely self-teaching."

Bill Allen, also of Newcastle Polytechnic, goes further. "The adaptability and the wealth of software available for the Apple are the obvious (advantages). The systems are very flexible... and very reliable. You can do on an Apple the kind of thing that people do on £20,000 development systems."

It is therefore not surprising to learn that there are over 2 million Apple computers at

use in institutes of learning in the United States alone. They are also becoming widely used in business on both sides of the Atlantic, ensuring a high degree of reliability and strong dealer support.

If you would like to learn more about Apple in education, the Macintosh Academic Conference is being hosted by Imperial College on April 5 and 6. Just post the coupon for details. We shall also be pleased to send you further information on our products and preferential pricing for education.

The last word comes from Michael Kimber of Gateshead Technical College. "I haven't seen anything so far that makes me regret our original decision to go with Apple. The machines are working day and night, they are very robust, and they are allowing us to fulfil our commitment to both computer literacy and applications courses. They have been an excellent investment."

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Competing requirements

Henry Norton assesses the changes in demand for university computing services

The rapid developments in computing technology during the past few years have stimulated interest throughout the whole academic community and increased the demand on the computing services. New users are coming in from all disciplines and existing users are expanding their requirements in both volume and sophistication.

At the same time, the government's policy of reducing expenditure on universities has made it difficult for computing centres to respond rapidly enough to this increasing demand. The major problem is the need for staff to operate an ever-increasing range of computing and communications equipment and to provide advisory services in central, departmental and personal computing and networking facilities. There is also the difficulty of providing equipment and services to support the increasing use of workstations, particularly for teaching.

Many academics will be at a disadvantage if the computing services are allowed to decline. Some are totally dependent on computing, as their work consists of analysing mathematical models of physical systems. Computing centres, however, have already made economies. Fewer operators have been needed with more reliable equipment and larger fixed-head disc storage devices. Similarly, teams to modify suppliers' operating systems are no longer required. Reductions in these areas have been needed to meet other demands, so that numbers of staff have remained fairly constant despite the additional workload.

Advances in the design and produc-

tion of integrated circuits have resulted in powerful computing equipment becoming available in compact form and at low cost. Those manifestations having most effect on the universities' computing services are personal computers; the use of microelectronics products in industry; and new types of computing equipment and peripherals.

The popularity of personal microcomputers has affected universities in two ways. First, staff and students wish to use them for their applications; some have even been prepared to buy their own. They then seek advice from the computing centres on appropriate hardware devices, software applications packages, and in particular how to link into networks so as to gain access to expensive centralized software or databases.

Second, the increasing commercial and management use of personal computers leads students to demand and expect education that would provide familiarity with such devices. The computing services are then put under pressure to provide teaching facilities on personal workstations. For many years, there has been a requirement for undergraduate courses on computing, often beginning in the second year. Now, first-year students are required to use computers.

Similarly, the increasing use of microprocessors by industry to control functions in a wide range of consumer products has stimulated interest in computing in general. As most students in science and engineering will have to use these in their careers, they expect that equipment will be made

available for them to learn about computing applications.

The government's various information technology initiatives have also stimulated interest and increased the demand for computer support services. As this increase in interest and demand has emerged, manufacturers have been able to use advances in microelectronics to produce new types of equipment - such as laser printers, optical character readers and graphics design workstations. The existence of these new devices in turn creates interest among advanced research workers who wish to take advantage of the most up-to-date techniques and machine aids.

The increasing use of computers applies also to departmental facilities funded from general income or by the research councils. As a rough esti-

mate, the equipment in computing centres represents only about one-third of the total computing facilities. The computing centres are then expected to provide advisory services to the users of these departmental facilities, particularly on programming, software applications packages and communications networks.

The computing services in universities have evolved steadily over the years to meet the changing demands of users, in both quantity and type of facilities, and to exploit developments in computing techniques and computer technology. The impact of new information technology has been rapid; more importantly, it has come at a time when government policies have resulted in a general reduction in staffing levels, including those in computing centres. However, although the computing centres have tried, they have not been able to adjust fully to the new demands. But what advisory and other supporting services do computing centres provide and how has the demand increased in recent years?

A sample survey indicates that there are now about six times as many terminals connected to the mainframes in computer centres than there were ten years ago, and the number of hours of interactive use has increased between ten and 50 times - mostly, of course, during prime shift (from 0800 to 1800 hours). During the same period, the disc storage capacity has increased by a factor of ten.

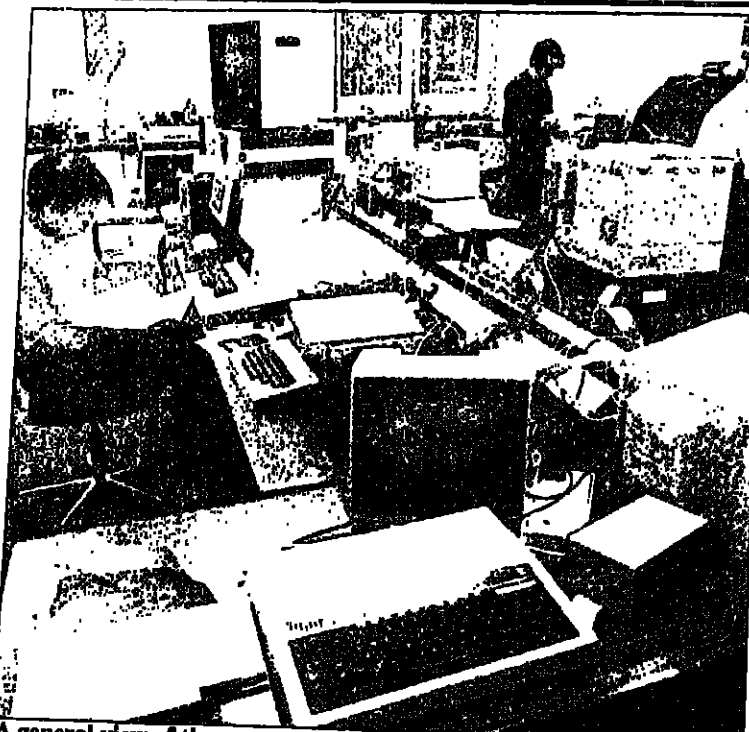
A few years ago, it was academic staff and postgraduate students who used computing facilities. Moreover, they were mainly physical scientists or engineers who had some familiarity with handling mechanical or electronic equipment and who were to a large extent self-reliant. However, as undergraduates and technical staff now use the facilities, the size of the user population is of a totally different order. There are also users from the humanities who in general need much more help and guidance than their science colleagues. Moreover, since these applications in the humanities are novel, many computing centres do not have the necessary experience and must therefore build up the support services from scratch. In addition, administrative and secretarial staff seek advice on the specification, installation and operation of word-processing and office-based systems to supplement the help they obtain from the people who manage administrative computing.

available in other universities and at the Science and Engineering Research Council's Daresbury and Rutherford and Appleton Laboratories.

The Computer Board's edict that all networks should conform as far as possible with the emerging international standards has imposed additional burdens on the computing services. The difficulty has been brought about by the need to make connections with little of the appropriate communications software is available. The Joint Network Team (JNT) was appointed to ease the burden in computing centres by coordinating developments. The need for such a body is likely to continue, however, until the international standards have evolved and become accepted and established, possibly by the end of the century.

Users of departmental microcomputers and, more recently, personal

continued on page 31



A general view of the computer centre at University College London.

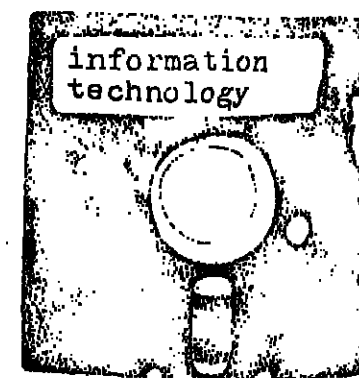
PHOTO: SIMON CROSETT

The number of programming languages on which people need advice is increasing. Prolog being the most recent addition to a long list which includes Basic, Fortran (77 and 90), Pascal, Cobol, Algol (60 and 68), Ada, APL and Lisp. Operating systems include those used on departmental minicomputers, microcomputers and workstations such as UNIX, CP/M, DOS in addition to those for mainframe computers; the many software packages are devoted to mathematics, statistics, information retrieval, and graphics; and there are also databases of widespread interest, such as Census Data and the Cambridge Crystallographic Database.

It is possible to a limited extent to departments to advise their students and staff on the use of some programming languages and packages in relation to the work of the department. The system support for such facilities, however, rests with the computer centre and nearly all centres publish an annual list of available software together with the level of support it can be given. In this way computer centres are able to consider and weigh the competing requirements of established users and newer applications - for instance, in the humanities.

In addition to providing general advice and answering queries, computing centres must also provide documentation and training courses on local and remote facilities - exactly which are available and how to use them.

Universities have always been at the forefront of applications of networking. Indeed, networking has been an essential component of their computing strategy from 1962 onwards. All institutions need to have access to the two national centres - the University of London Computing Centre and the University of Manchester Regional Computer Centre. In addition there are many regional centres - the Edinburgh Regional Computer Centre, the Northumbrian Universities Multiple Access Computer Centre and the South-West Universities Computer Centre - and some special facilities are



available in other universities and at the Science and Engineering Research Council's Daresbury and Rutherford and Appleton Laboratories.

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Users of departmental microcomputers and, more recently, personal

continued on page 31

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Cryptological purposes

Frank Knowles traces the upsurge of interest in automating the process of translation

The idea of machine translation (MT) was one of the earliest suggested applications of computers in the field of natural language processing. It is almost 40 years since Warren Weaver, one of the doyens of American science, addressed a famous memorandum to some 200 colleagues on the subject. Weaver, in taking his starting point the experience he had gained during wartime work for the United States government in the field of cryptography, formulated the MT problem by drawing an analogy with cryptanalysis. His contention ran thus: "I have a text in front of me which is written in Russian but I am going to pretend that it is really written in English and that it has been coded into some strange symbols. All I need to do is to strip off the code in order to retrieve the information contained in the text."

That formulation encapsulated a good deal of validity, although it was imbued with a surprising dose of naivety. But the use of computers for cryptological purposes was an established fact - just as much then as now - and Weaver's way of looking at things resonated with many leading scholars such as Norbert Wiener and Claude Shannon, whose "information theory" was all the rage and was itself the product of Shannon's wartime service as a cryptanalyst. Many viewed his work on the making and breaking of secrecy systems as being of much

greater significance than the overtly public domain contributions which secured him his international reputation. The idea of using computers for facilitating rather than impeding communication was intrinsically attractive and the academic community, in a confluence of interests with the intelligence and military confraternity, mustered enough persuasiveness - not just in the United States but also in Britain, France, Italy, Germany - to elicit large research and development budgets for MT. Similarly, other major countries like the Soviet Union and the emergent People's Republic of China were stimulated by their own insights to fund MT research.

With today's hindsight it is all too easy to see that ambition and wishful thinking far outstripped any genuine capability which might have led in the 1950s and early 1960s to realistic prototype MT systems. In the event the shutters came down on the American MT scene in 1966 as a result of the report of the Automatic Language Processing Advisory Committee (ALPAC), set up by the National Academy of Sciences. Funding to American researchers was cut back, and the ALPAC report was regarded as a very authoritative document in other western countries, where it also exerted a baleful influence. It took the best part of a decade for MT to emerge from the doldrums, and during that

period MT research and development was at a very low ebb, pushed forward only by the uncoordinated and often idiosyncratic efforts of the most dedicated aficionados. Effectively speaking, systematic research ceased in Britain and Italy and was all but stifled in France and Germany. In China the cultural revolution emptied the laboratories and even in the Soviet Union the MT thrust of so-called "engineering linguistics" was dissipated, not least by the emigration of several leading experts.

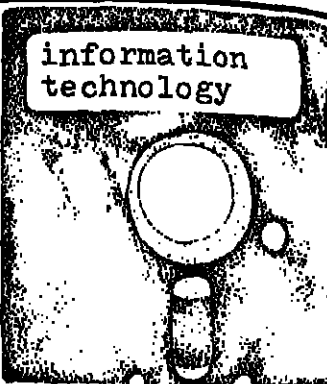
It was not until about 10 years ago that the first signs of a renaissance appeared. Not all of this new growth thrived or even survived: as a result either of appalling bad judgement or of appalling bad luck the Logos company's first two efforts foundered - they had chosen Vietnamese and Farsi as so-called "target languages" for their systems, but all their work was to be overtaken by cataclysmic political events. Brigham Young University spent huge sums of money on efforts to translate the Mormon scriptures into many languages by machine; the result was - predictably enough - a graveyard of shattered aspirations and the indecently rapid emergence of two highly commercially-oriented companies which now "slug it out" against each other in the market-place to gain both orders and loyalty from translators.

Several French MT experts left metropolitan France for the climes of Canada, where the bicultural policy gave them a foothold, in concert with their Canadian colleagues, to develop the METEO system, one of the few MT systems to earn its bread and butter by automatically translating weather forecasts from English into French. Some 25,000 words are translated daily with a correctness index of approximately 95 per cent - the residual dud output is identified by the machine itself and is diverted off the meteorological wire service to human translators. These latter had been the original catalysts of the METEO system by drawing attention to the high translator turnover (to resignation every six months) caused by the monotony of the task in hand - the very attribute that made it such an excellent candidate for computerization. An ambitious attempt to transmute the METEO system into a vehicle for translating into French approximately 100 million words of English text taken from aircraft maintenance manuals failed, but on grounds of microeconomics rather than as a result of any intrinsic flaws in the strategy; human beings were, at their rate of seven pence per word, 20 per cent more cost-effective. It is prudent, incidentally, not to place too much credence in such quantifications because of lack of clarity about overheads, the "time window" applied, and the amortization of research and development costs.

The massive SYSTRAN system was able to draw funds from the American military research budget and was used in the joint Apollo-Soyuz project. It also found itself some new commercial outlets: General Motors and - most notably - the European Commission which bought SYSTRAN in order to

determine whether new language "pairings" could be propagated from the original Russian-English stock, and whether SYSTRAN was already operating at a ceiling level of performance imposed on it by an early 1960s design. The answer to this question was a "yes" - admittedly, less than totally unequivocal - but nevertheless a decision was taken to commission the specification of a new MT system known as EUROTRA, capable of ameliorating the predicament of the European Commission vis-à-vis the alarming logistics of translation: 72 different language "pairs" or directions of translation within nine major languages; current expenditure of almost £2 in order to translate one word of a "source" text into all the eight "target" languages (this is why one-third of the Commission's administrative budget is allocated to translation); a chronic backlog of material to be translated; the continuing cost escalation involved in deploying human translators; and last but not least, the unlikelihood of any major policy changes that would positively affect the situation described. The EUROTRA system is now being implemented, at a cost not far short of £20 million over a five-year period, with the involvement of about 150 experts, metaphorically drawn from numerous European universities. Success is by no means guaranteed, yet it is distinctly unlikely that this major collaborative effort will be tantamount to an expensive feasibility study which reports negatively.

The Pan-American Health Organization is devoting considerable effort



to the already reasonably impressive Spanish-English MT system it uses; development of an English-Spanish system is under active consideration. The Dutch firm BSO, in partnership with the Dutch government, is currently drawing on a budget of £7 million allocated for the development of a robust "office translating system"; the system's designers have chosen Esperanto as a "pivot" or intermediate switching language for their system. The extent of their success will also be a measure of change in the status and mechanics of Esperanto, despite the designers' intentions to keep "their" Esperanto hidden from public view. The use of such interlinguas or at least of agreed detailed information protocols produces major logistic benefits which far outweigh the extra initial investment. Free-standing analysis and synthesis modules for each language in the system are required, plus transfer components for all the actual

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A Saxon manuscript depicting the Tower of Babel.

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workstations often require access to other facilities in their universities or, through communications gateways, to external facilities. Local area networks have therefore evolved. Computing centres, with advice and assistance from the JNT, have had to plan, install and manage these local networks. They also continue to play a role in providing advice to new users on the way they can connect their individual computers into the networks.

The problem of funding computing centres arises not only from additional duties. Computing centres were established about 10 years ago, when the staff recruited were all young and the profession was young. The inevitable drift, however, as both staff and the computing profession mature, has increased the costs of senior staff. Moreover, the high mobility of junior computing staff results in rapid staff turnover in computing centres, due to a major extent to the high salaries paid by outside bodies. Staff training is therefore an important and much greater consuming activity to a much greater extent than is usual in universities. The same factors also apply more generally in the universities to skilled technicians and to a lesser extent with clerical and secretarial posts.

In its report on *The Future of the Universities* (January, 1986) the Committee of Vice-Chancellors and Principals stated that "The nation must have graduates who... can understand and manage the social and

economic challenges of the technological revolution". An essential component in the education of such graduates is the adequate provision of computing facilities and advice on the use of computing resources through the four-level hierarchy of personal workstations; departmental minicomputers; central university mainframes; and national computer centres. Computing centres were established to provide services at the two upper levels of this hierarchy. There is an urgent need to expand the services at the two lower levels so that the best advice and training are given in the use of the types of computers that are most likely to be encountered in industry and commerce.

At the same time, the other levels have to be supported. Users of personal computers, particularly for research projects, often find them inadequate as the project progresses and they then need to ascend the hierarchy to more powerful facilities. Moreover, as existing users of these powerful facilities are working on some of the most demanding problems in engineering and science, they need to be continuously supported.

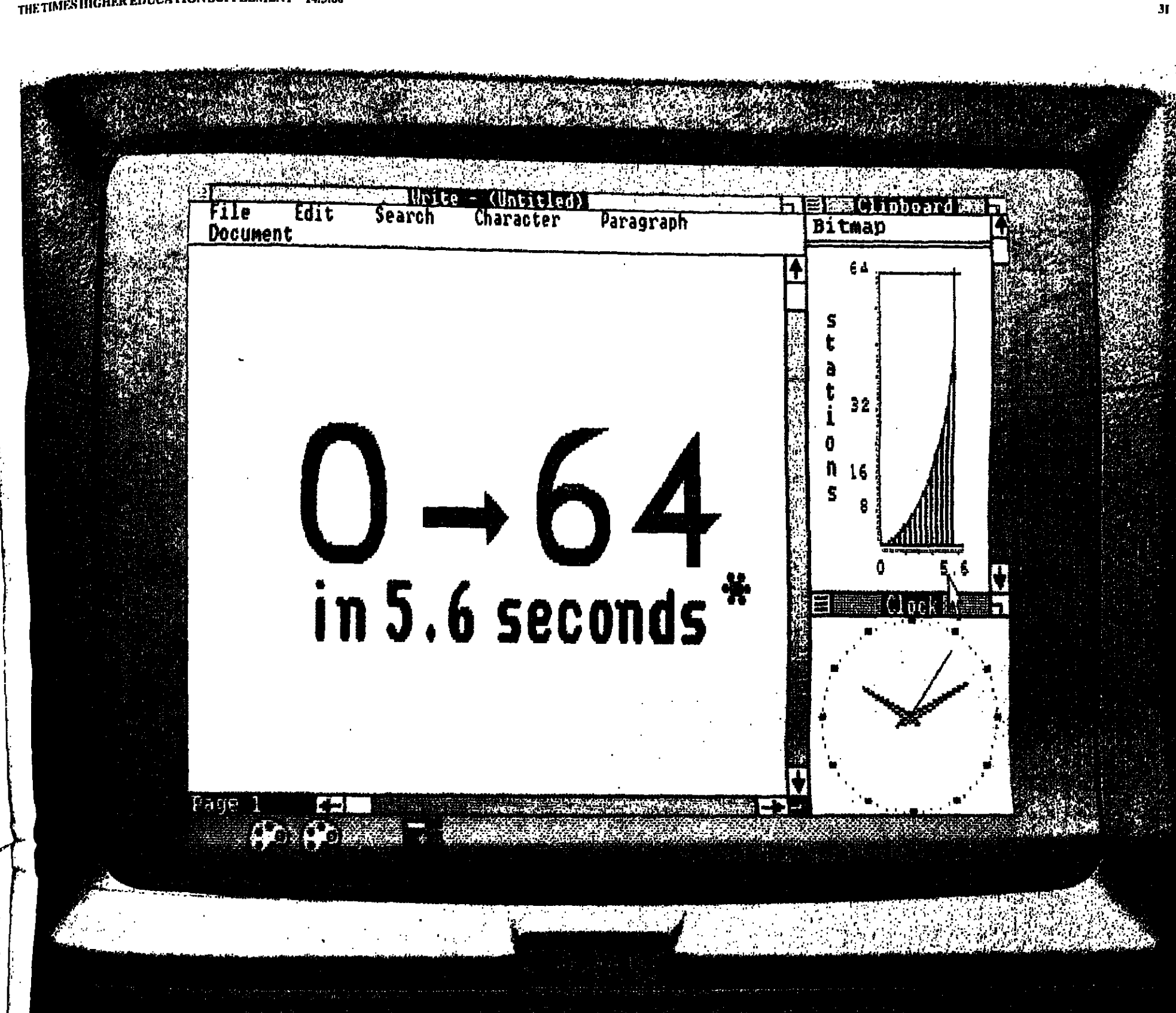
Distributed systems increase in popularity with more powerful minicomputers and workstations. Nevertheless, computing centres are likely to be needed for large central databases, expensive software packages and advisory services. Centralized management might also be needed but flexibility of organization should be

maintained to cope with rapid technological developments.

There is a choice of ways forward. Computing services could continue to try to cope with increasing demands and reducing resources. This would mean that many students and research workers would have to learn to use personal computers without assistance or advice. In this way, much of their time could be wasted in the university and later in their subsequent careers.

There is little scope for diverting resources from other activities to computing since the government's reduction of expenditure on universities has put a strain on resources in all areas. In order to preserve and develop computing services, therefore, it is imperative that additional funds are allocated. Earmarked grants could be provided through the University Grants Committee or the Computer Board for Universities and Research Councils. Although such special pleading could also be made for other areas of teaching, research or scholarship, computing is special in three respects. It has expanded and continues to expand more rapidly than any other area; it is a basic tool that can be applied with benefits in every discipline; and it is of increasing relevance for careers in commerce and industry. We must all endeavour to ensure that the correct path is taken.

Henry Norton is Controller of Computing Services in the University of London.



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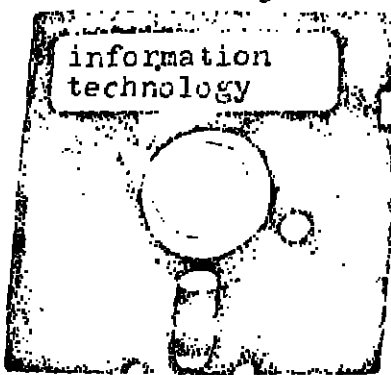
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directions of translation needed. This approach requires one, and only one, English analysis module, say, irrespective of the envisaged target language; conversely a French synthesis module, for instance, does not "need to know" in what language the information it deals with was originally couched.

The MITALS system, co-financed by Siemens at the University of Austin, Texas, is also growing apace in scope and performance prospects. The CULF system in Hong Kong quietly and unobtrusively translates Chinese mathematics periodicals into English, and attempts are now under way to develop a spin-off system which will translate in the reverse direction. The Japanese government betrays, through its funding agencies, its strong conviction that MT is a top priority: it is a "core module" of the much-vaulted Fifth Generation Project. Under the aegis of the Japanese Science and Technology Agency a score of MT research groups are active in Japan, seeking partnership with foreign experts and drawing on earmarked public funds of £3 million. The business community in Japan is "venture-investing" very much more in its race for the economic power that reliable MT know-how will bring.



A relatively new brand of MT, machine-aided translation (MAT), stands poised to capture an increasingly large market share of sales to individual translators and to organizations, such as agencies, which cannot afford investment in mainframe MT and which are effectively frozen out by the lack of proper MT bureau facilities. Weidner, ALPS and Logos products vie aggressively with one another in this arena, but they hide the size and shape of the professional re-profiling needed by their systems' users.

Where does MT stand today, almost 40 years on, after over £100 million has been spent on it worldwide? What is the precise mismatch between the results deliverable right now and the aims of MT experts, which are arguably some of the loftiest and most ambitious cherished by any sort of researcher anywhere? It is perhaps right and proper to state first of all that the definition – strategic, tactical and operational – of the problem is now much clearer both in its global aspects and in its fine structure. There is a much greater, though far from total, awareness about what the act of translation is and this leads to an acknowledgement, albeit a frustrated one, that MT systems currently achieve what they do by simulation not by emulation. There is a consensus that

only certain types of translation are amenable to computerization: translation texts must be fairly and squarely in the realm of stereotypical and non-affective language; they must effectively be exemplars of an identifiable sublanguage, as evinced by theme, style, texts and syntax.

MT researchers are clear about the trade-off between so-called "pre-editing" and "post-editing". Pre-editing means recasting input text so as to remove known or likely stumbling blocks, massaging the form of the text but on no account its meaning. This is only an MT application of the practice increasingly adopted by technical writers in their efforts to remove every single ambiguity from the technical documentation they produce. Coercing the text in this way reduces but does not obviate entirely the post-editing or revision operation which is a normal feature of professional translation, whether carried out by man or machine. If there is no pre-edit then the post-edit tends to be extensive, ironically calling for the reviser to have a good knowledge of the source language of the text in front of him.

MAT systems calculate a cosmetic trade-off finely by emphasizing the "uniqueness" of the interactive edit, normally including entering new words into the dictionary; the computer then proceeds to produce a "raw" translation. Translators using MAT systems must therefore be their own lexicographers and terminologists, devoting much of their time to this task. The broader, unanimously accepted lesson is that MT systems must have large and highly intricate lexical databases as integral modules – say, half a million entries ranging from word fragments and words to collocations and sentence idioms. What you cannot compute you must be able to look up; and vice versa.

MT systems should ideally be able to deal with any cruces arising on any level of the multi-tier information structures that texts constitute. Course lexical equivalence and the gross syntactic organization of text have been recognizable by machine for a long time. The effort needed to raise the level of sophistication to match reasonable semantic, stylistic and pragmatic requirements, however, is proving horrendous, even though income is being made into many of the difficulties. The resolution by human beings of many problems of language ambiguity hinges crucially on the way people interact with their direct environment or call on previous "exposure" to their environment.

"Machine intelligence" is puny in comparison: we have not yet found a general way of allowing an inanimate, limited and immediate computing "environment" to verify the coherence and consistency of large-scale inferring or to look outside the artificial shell (to use that term in both its figurative and computing senses). The MT unit of analysis, it must be ruefully admitted, is still the isolated sentence – not a larger context or co-text, if we employ the terms proposed by the protagonists of text linguistics who have so much to offer MT researchers. Given the current state of the art, then, MT software is going to have problems with such utterances as: "He noticed her shaking hands"; "He observed the woman on the hill with the telescope";

"He is a heavy smoker"; "He has been at the bar for a long time"; or "Mrs T. turns on Liberals". If any readers believe that analogous cruces do not occur in other languages or indeed in stereotypical scientific and technical discourse, how wrong they are.

MT specialists all over the world stand on much firmer ground today than when Warren Weaver penned his challenge. Computer hardware and the software vehicles now available are at a level of sophistication rarely dreamed of by the pioneers. Failures have been digested and the dimensions of the MT problem and its ultimate tractability have been more soberly assessed; storming the bastions of the Tower of Babel by mechanized forces in a single frontal assault is an option eschewed by no one. It is a war of attrition concentrating on tactical objectives, rolling back the adversary bit by bit and by guile. The citadel cannot be routed but a sensible alliance of man and machine can help a world beset by difficulties of communication and technology transfer and by stark contrasts of a geopolitical nature. The onus has always been on translators to repudiate and to refute the contention: "Traduttore – traditore". The MT confraternity – consisting of linguists, AI specialists and computer scientists – must also prove the falsity of a slightly emended version of the above Italian adage: "Traduttore – traditore".

Frank Knowles is professor of modern languages and Senior Pro-Vice-Chancellor at the University of Aston.



PHOTO: MARTIN MAYER NETWORK

Challenging complacency

Alan Gordon reports on the efforts of some British companies to improve training resources

During the past two years British companies have been roundly criticized for devoting insufficient resources to the training of new recruits and to the retraining of existing employees. Such a low level of training effort in Britain compares unfavourably with the resources and attention paid to initial and continuing training in countries such as France, the Netherlands, the Federal Republic of Germany, Japan and the United States. In 1984 British companies spent just 0.15 per cent of turnover on training – £575 per trainee or £200 per employee (*Adult Training in Britain*, MSC, 1985). The Manpower Services Commission (MSC) have pointed out that the private sector is spending just £4 per person per week to train and retrain the British workforce and is working hard to challenge the complacency of industry towards training (*A Challenge to Complacency*, MSC National Economic Development Office, 1985).

On average, just 14 hours off-the-job training a year would be the norm in Britain. The MSC have pointed out that 30-40 hours training off-the-job is

considered good practice in the Federal Republic of Germany, and it is not at all unusual to find American companies spending up to three-and-a-half per cent of sales revenue on training, with Japanese companies spending up to five per cent. It is certainly no coincidence that those American and Japanese companies that have invested heavily in training seem to value training more highly than many of their British counterparts.

Such figures relate to industry generally and not only to training by information technology (IT) equipment and user companies; it is extremely difficult to quantify the level of IT-relevant training that is taking place. There is evidence to suggest, however, that IT companies themselves (foreign-owned and indigenous) do rather better than the average in this respect, although they still do not match the efforts of competitor countries and overseas companies. A forthcoming report from the Institute of Manpower Studies should provide much-needed information on company training and retraining in IT.

Despite criticisms of a low level of commitment and a paucity of resources devoted to training, there are a number of examples of good or even best practice in IT training effort that demonstrate just what can be done with senior management commitment and a proper recognition of the contribution of training to business performance. IT training and retraining can also, of course, go some way to alleviating any existing skill shortages. It is rare to find companies developing, manufacturing or using IT in non-engaging or in planned programme of on-the-job and off-the-job training for new recruits. Only where recruitment is almost exclusively of experienced staff (typically small design houses) or where tasks performed are repetitive and routine (as in much microelectronics assembly work) will initial training be unnecessary (as in the former case) or at a very low level (as in the latter case). Elsewhere, there are examples of good practice for initial induction and training.

Particularly innovative was the development for 1984-85 by Rascal of a new IT conversion course for numerate but non-IT graduates. Aimed particularly at science and engineering graduates, the Rascal conversion course, lasting nine months, was designed to provide students, on salary, with the skills to pursue a career in electronics, commencing as a member of a design laboratory. The core of the

course involved tuition in electromagnetism, electronic devices and circuits, linear and digital circuit design, and communications. In addition, a specialist subject was also studied, with the options including micro-waves, signal processing, and RF circuit design. Like the IT conversion courses developed by the Science and Engineering Research Council (SERC), it was never the intention to attempt the impossible of reproducing the breadth and depth of IT skills acquired on a specialist three-year or four-year degree course.

The Rascal conversion course used a combination of teaching methods (lectures, seminars, and so on), self-teaching, video instruction, and practical work. The course was developed in conjunction with university specialists and for 1984-85 had 150 applications for the 22 places on offer. Rascal, of course, also has a comprehensive programme of staff training for other new graduate recruits and for existing employees. One additional point to note is that the training needs of a company involved in research, development and manufacture of IT equipment and products will differ substantially from that of an IT user company. For the user, initial training is still vital, but the skills needed and the depths to which they have to be acquired are very different.

In the development section of the management and information division of Lloyds Bank, the initial training of programme managers takes the form of a six-months planned schedule: three months learning formal languages and three months programming. No specific knowledge or experience of computers is assumed prior to recruitment.

Embarking on the in-company course, trainees are usually taken on one ratio nine with A levels to every one graduate. Specialist IT graduates are not required. On average, a programmer will spend one-third of his or her time during the first three years with the bank on different kinds of in-house courses and courses run by equipment suppliers, not all of which will be related to IT skills needs. The initial months' training is provided by in-house departmental instructors, who have also successfully developed training materials to convert programmers into systems analysts. Technical support staff in the division are also trained in-house with a seven-week computer languages and IT appreciation course.

Another form of initial and integrated training that is almost the exclusive preserve of electronics components and other engineering companies is employer sponsorship of undergraduates, both on full-time and sandwich courses. In 1983, 28 per cent of first-year electrical and electronic engineering students were sponsored by an employer. And the number of students in these subject areas increased by 70 per cent (Employer

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Digital documents

Terry Cannon examines the impact of electronics on libraries' handling and provision of data

There is in America a computer that runs a rather unusual library. Not only does the computer manage the normal housekeeping routines of the library, such as circulation, acquisition and cataloguing systems, it also provides access to a whole range of information both local and remote. It holds community resource files on clubs, courses, calendars of events, planning, population and consumer statistics, and even weather and a local encyclopedia. It also provides a communications facility including electronic bulletin boards, electronic reference and electronic mail. It can provide access to regional networks, electronic inter-library loan and, to major database hosts, such as DIALOG and BRS. Furthermore, access can be had both by the patron in the library, the user at his home computer, local businesses, library staff, other branches and other libraries, theoretically almost anywhere in the world.

Is such a system likely to appear in

Britain? Although many aspects are under development or research in this country, the problems of implementing it are much more on a social and managerial level than technological. Even the forerunner of the library described – Kenneth Dowlin, librarian of Pike's Peak, Colorado – admits that it is unlikely to become fully electronic before the year 2000. As with the advent of many technologies in the past, new technologies will continue to run side-by-side with the existing system for some years to come. Books and printed materials still have value for a great many purposes, not least their aesthetic pleasure. Furthermore, they are for most readers still the easiest form of information to access, use and carry about. Good quality paper is still one of the most reliable archival media we possess, and there are many problems still to be resolved before a fully electronic archive can be guaranteed permanent and usable. Librarians who

are setting out along the electronic pathway will need to consider how much study space to provide for readers, given remote access from the wired-up campus or community. Most would see no reason to dehumanize the library, but rather to widen the range of possibilities and efficiency in the provision of services.

Turning to the user's point of view, the traditional, formal method of information exchange in academic circles revolves around the production, review, distribution and study of scholarly documents. The process links research workers, as authors and readers, via a network of learned institutions, publishers and libraries. In such a system, delays inevitably occur in the flow of information from author to reader, and more informal contact is often difficult. As electronic communication, storage and display technologies have advanced, new opportunities to extend information exchange have arisen. Thus, research workers may now call on teleconferencing facilities, use an electronic mailbox, consult a computer indexing system and write research papers on a word-processor.

These technologies were brought together in the BLEND (Birmingham and Loughborough Electronic Network Development) project funded by the British Library Research and Development (R&D) Department. Communities of researchers were linked by an electronic conferencing system to exchange information at a variety of

levels – ranging from informal messages and bulletin boards to fully refereed research papers in an electronic journal on the subject of *Computer Human Factors*. BLEND has pinpointed many of the problems, both human and technological, of operating such a system, and further research is now underway to investigate a number of possible scenarios – including centralized systems, which require users to access information through remote stores; decentralized systems, where information is provided in packages to local centres (just as traditional publications are sold and stored in libraries); and hybrids of the two.

Although technology, in the form of automated housekeeping systems and computer-based catalogues, arrived in libraries some 20 years ago, a recent survey of all local-authority library systems in Britain shows that only 56 per cent are actually using computer techniques for circulation and 58 per cent have computer-based catalogues. On-line access to databases, originally predominantly in abstracting and indexing services but increasingly in primary information, is now available in the major public libraries, in academic libraries and in special libraries. Electronic document delivery systems, however, lag behind in their development and, where available, in their use. Electronic publishing is advancing, but far less rapidly than predictions have suggested. But whereas the paperless office will eventually emerge (though not as a univer-

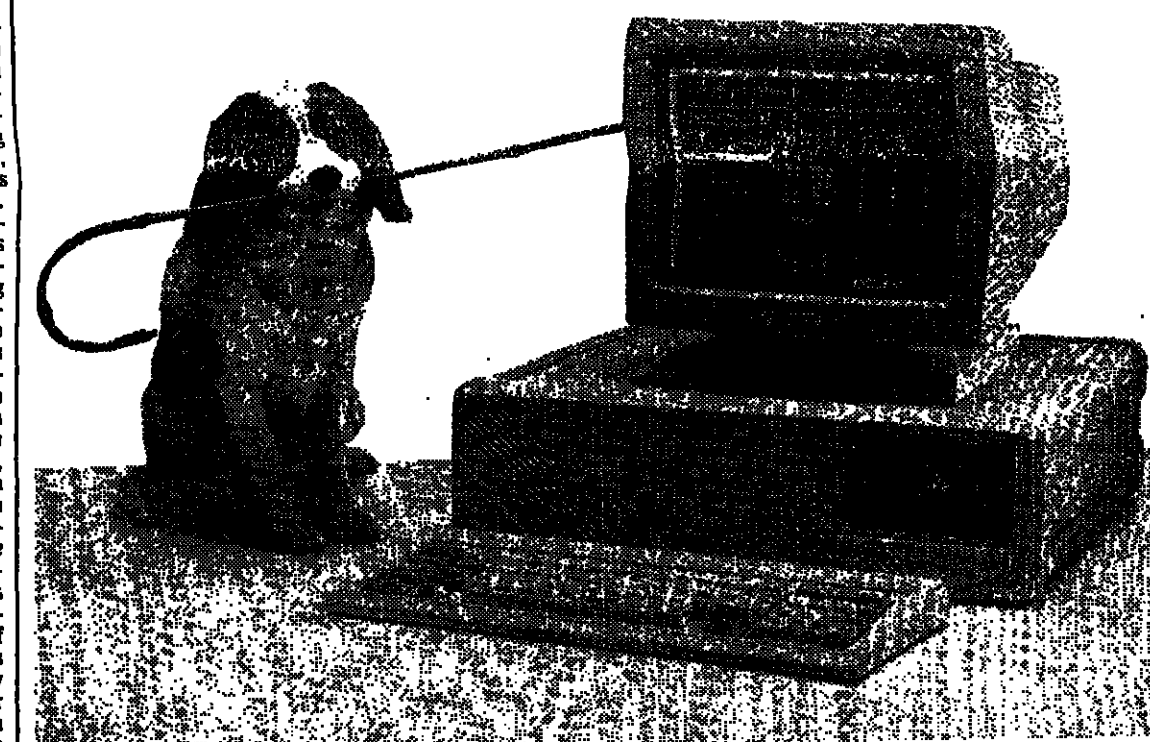
sal feature), the paperless library is unlikely ever to become a reality.

A balanced view of library and information service provision therefore sees technology as a means, and as one means among several, to the end of providing the user with the relevant required information, while at the same time acknowledging that the influence of technology will be greater in some areas than in others. What is undeniable is that computers, and the facilities which they offer for database access, for database creation, for local and wide area networks, for the rapid transmission and exchange of data and information, and for the integration of systems, have opened up new dimensions and pushed back the horizons of information handling.

The on-line public access catalogues (OPACs) which are now beginning to arrive have greatly widened the horizon of the average user of the library, who can now readily interrogate the catalogue of the total bookstock, instead of pawing through trays of catalogue cards or a distinctly unfriendly microfiche reader. The British Library R&D Department has been supporting research on an OPAC, based on a local-area network at the Polytechnic of Central London, and has recently published a call for proposals in a major programme of research on OPACs. Areas to be covered include systems design for improved retrieval, user studies, impact on the organization, ergonomics of

continued on page 34

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For further information about these titles and a copy of the 1986 catalogue please contact:
Book Publishing Dept., Institution of Electrical Engineers,
P.O. Box 8, Southgate House, Stevenage, Herts, SG1 1HQ.
Telephone: 0438 313311.



Universities continued

ITHACA COLLEGE
DIRECTOR OF THE LONDON CENTRE

Applications are invited for the position of Director of the London Centre of Ithaca College. The new London Centre Director will assume the responsibilities of Dr Christie King, who is moving to the main campus in Ithaca, New York, to be the Director of International Affairs.

Ithaca College is a fully accredited American university in upstate New York with 5,600 students studying in six professional schools and a school of Arts and Sciences.

The London Centre Director reports to the Director of International Affairs in Ithaca, New York and has administrative responsibilities for co-ordinating and administering Ithaca's semester abroad programme and London-based Freshman programme.

Ithaca College is seeking applicants who have a PhD and administrative experience with international programmes and effective skills in dealing with faculty, students and the public. The London Centre has approximately 230 students and 45 lecturers and is expected to grow in the next few years.

Salary is negotiable.

Preferred starting date: on or before June 1st 1986.

To assure consideration send letter of application and resume by April 4th 1986 to: Dr Christie King, Director, Ithaca London Centre, 35 Harrington Gardens, LONDON SW7.

Further particulars and application forms are available from Mr J. Kelly, Secretary of Faculties and Deputy Registrar, The Registry, University of Kent at Canterbury, Kent CT2 7NZ. Completed application forms (three copies) should be returned not later than Monday 7th April 1986. Please quote reference no. A1296/THES

UNIVERSITY OF ABERDEEN
NEW HEALTH SERVICES RESEARCH UNIT

DIRECTOR

The new Health Services Research Unit, funded by the Scottish Home and Health Department, through its Chief Scientist Organisation, has a remit to study and evaluate practices related to the provision of clinical services and the care of hospital patients. Central to this remit is an aim to improve effectiveness and efficiency within the Health Service locally and nationally.

Applications are invited for the post of full-time Director to head and direct the Unit. The Director will be responsible for the provision of clinical services, medical or non-medical, with substantial experience in applied health services research and the post will be of Senior Lecturer status with an assured initial funding of 7 years.

The Director will be assisted by appropriate research and support staff and is also assured of the collaboration of a Medical Faculty which has already established substantial clinical resources and attracted an energetic support for the work of the Unit from colleagues. The Unit can also be expected to benefit from established close links with related local groups and activities, including the Health Economics Research Unit, the Unit for the Study of the Elderly, the Medicine Evaluation and Monitoring Group and an innovative computer-assisted patient record system directed at high-risk groups of patients.

Further particulars and application forms from the Secretary, The University, Regent Walk, Aberdeen AB9 1FX with whom applications (2 copies) should be lodged by 1 May 1986 (Ref. ELO29).

UNIVERSITY OF STIRLING
CENTRE FOR SOCIAL WORK RESEARCH
Senior Research Fellow

Applications are invited from well qualified social science graduates with substantial experience of applied social research. The person appointed will play a major role in planning, managing and conducting research into the effectiveness of social work. The Centre is funded jointly by the Economic and Social Research Council and the Social Work Services Group of the Scottish Education Department. Professor Juliet Cheetham has recently taken up the Directorship of the Centre.

The person appointed, who will be expected from time to time to deputise for the Director, will hold a Senior Lectureship in the University (salary scale £21,700-£26,413). An appropriately experienced applicant may be offered a Readership (salary scale £16,817-£21,413); scales subject to review. The contract will be for five years and may be renewable for a further fixed period.

Further particulars can be obtained from the University Secretary, University of Stirling, Stirling FK9 4LA, Scotland. Informal enquiries may be made to Professor Juliet Cheetham, Director, Social Work Research Centre, University of Stirling, Stirling; Tel: 0788 75171, Ext 2134.

Please quote reference (?)

Closing date for applications 1 April 1986.

UNIVERSITY OF EDINBURGH
PRINCIPAL

Dr J. H. Burnett has intimated his retirement from the post of Principal of the University of Edinburgh with effect from 30th September 1987.

The Curators of Patronage of the University of Edinburgh, who have the statutory duty of appointing the Principal, now invite any individual of appropriate experience and background who is interested in appointment to this post, or anyone wishing to suggest any names for consideration, to communicate in confidence and not later than 30th April 1986 with the Secretary to the Curators, Mr. A. M. Currie, OBE, BA, LL.M., Old College, South Bridge, Edinburgh EH8 9YL, from whom further information is available.

SOUTH EAST THAMES REGIONAL HEALTH AUTHORITY
AND UNIVERSITY OF KENT AT CANTERBURY

Management Training Adviser/
Honorary Research Fellow/
Associate in the Health Services
Research Unit

This post represents an opportunity to link an academic research approach to management and management training with the practical need to assist managers at all levels in the region to do their jobs.

The successful applicant will be a graduate and probably hold a higher degree in the Social Sciences. He/she will be familiar with the organisation and culture of the NHA and be aware of recent developments such as the Griffiths report.

The appointment will be from 1st June, 1986 or as soon as possible thereafter.

Salary will be on the NHS scale 9 - £9,137 - £11,222.

Further particulars and application forms are available from Mr J. Kelly, Secretary of Faculties and Deputy Registrar, The Registry, University of Kent at Canterbury, Kent CT2 7NZ. Completed application forms (three copies) should be returned not later than Monday 7th April 1986. Please quote reference no. A1296/THES

THE UNIVERSITY OF PAPUA NEW GUINEA
Vice-Chancellor

The position of Vice-Chancellor of the University becomes vacant with the expiration of Dr E. T. Brah's term. The Vice-Chancellor is the Chief Executive Officer of the University and is responsible to the Council for the overall management and development of the University.

The salary level and the conditions are similar to those applicable to Heads of Departments in the Public Service with generous fringe benefits.

Persons interested in the appointment are invited to forward their name and Curriculum Vitae to reach the undersigned by 20th May 1986, including names and addresses of three referees. Persons wishing to discuss aspects of the appointment are invited to contact either the Chancellor, Sir Buki Kudu or the Registrar of the University, P.O. Box 320, University, Papua New Guinea. Phone: 251-43 or 253000.

F. P. DIALA Registrar

University of Bradford
LECTURESHIP IN COMPUTING

Applications are invited for the permanent post of Lecturer in Computing from candidates who should preferably be specialised in one of the following areas:

Communications
Knowledge Based Systems
Performance Modelling
Healthcare Engineering
Software Engineering

Consideration will also be given to candidates with proven research experience in other areas. Duties will include teaching on the MSc Computing courses and the Computer Science and Computing and Information Systems undergraduate courses. The lecturer will be expected to join one of the existing research teams. Salary on scale £9,000-£16,700 p.a. Superannuable. Further particulars and application forms from the Deputy Secretary, Ref. ELO29, University of Bradford, West Yorkshire, BD9 4JT. An Equal Opportunities Employer. Applications to be submitted asap.

UNIVERSITY OF DUBLIN
LECTURER IN PURE MATHEMATICS

Applications are invited for the above post in the School of Mathematics at Trinity College, Dublin. The successful candidate will be welcomed from candidates with research interests in any area of Pure Mathematics.

Salary Scale: IR£9,581 - £19,963 p.a.

Appointment will be made within the salary range IR£9,581 - £19,963 p.a. at a point commensurate with qualifications and experience to date.

Application forms and further particulars relating to this post may be obtained from:

Establishment Officer
Staff Office
Trinity College
Dublin 2

Closing date: 1st April, 1986.

Royal Holloway and Bedford New College
University of London
CHAIR OF GERMAN LANGUAGE AND LITERATURE

The Senate invite applications for the above Chair.

Applications (10 copies) should be submitted to the University of London, 100, Strand, London WC2R 1RU, from whom further particulars should be obtained.

The closing date for receipt of applications is 1 April 1986.

University of Manchester
Department of Computer Science
SENIOR LECTURER AND LECTURER

The Department of Computer Science is seeking two academic staff within the general area of computer logic and artificial intelligence. The successful candidates will be expected to contribute to the department's research and teaching in these areas. The successful candidates will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Computer Science, University of Manchester, Oxford Road, Manchester M13 9PL. Please quote reference no. A1296/THES

University of Surrey
Department of Management Studies for Tourism and Industries
LECTURER IN TOURISM

Applications are invited for the above post which will be through the promotion of B. R. C. Wainwright to the Chair of Tourism. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Management Studies for Tourism and Industries, University of Surrey, Guildford GU1 3XH. Please quote reference no. A1296/THES

The University of New England
Australia
Equal Opportunity in Employment
SENIOR LECTURER/LECTURER IN AGRICULTURAL MECHANISATION

The Department is concerned with the development of agricultural mechanisation and the successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Agricultural Mechanisation, University of New England, Armidale, New South Wales, Australia. Please quote reference no. A1296/THES

University of Sheffield
Department of Philosophy
RADCLIFFE LECTURESHIP IN PHILOSOPHY

Applications are invited for a nine-month temporary lectureship in the Department of Philosophy, University of Sheffield, to be held from 1 October 1986.

Further particulars and application forms are available from the Department of Philosophy, University of Sheffield, Sheffield S10 2TN. Please quote reference no. A1296/THES

University of Edinburgh
CHAIR OF GEOGRAPHY

Applications are invited for the above Chair. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Geography, University of Edinburgh, Edinburgh EH8 9JL. Please quote reference no. A1296/THES

THE TIMES HIGHER EDUCATION SUPPLEMENT 14.3.86
Universities continued

The University College of Wales
Aberystwyth
LECTURESHIP IN FRENCH

Applications are invited for the above temporary post for a fixed term of two years commencing 1 October 1986.

Further particulars and application forms are available from the University College of Wales, Aberystwyth, Aberystwyth, Ceredigion, Wales, SY23 3DA. Please quote reference no. A1296/THES

University of Cambridge
TEMPORARY LECTURER IN SOCIAL ANTHROPOLOGY

A temporary lectureship in Social Anthropology will be available in the Department of Social Anthropology at Cambridge University for a period of two years commencing 1 October 1986.

Further particulars and application forms are available from the Department of Social Anthropology, University of Cambridge, Cambridge CB2 3RQ. Please quote reference no. A1296/THES

Oxford University
DEPUTY CHIEF ACCOUNTANT

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Accounting, University of Oxford, Oxford OX1 2JD. Please quote reference no. A1296/THES

University of Edinburgh
TEMPORARY LECTURESHIP IN MODERN BRITISH SOCIAL HISTORY

Applications are invited for the above temporary post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Social History, University of Edinburgh, Edinburgh EH8 9JL. Please quote reference no. A1296/THES

University of Liverpool
LECTURER

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Philosophy, University of Liverpool, Liverpool L69 3GB. Please quote reference no. A1296/THES

The University of Sydney
The Royal Prince Alfred Hospital
RAYMONDE PURVES
CHAIR OF DERMATOLOGY

Applications are invited for the above Chair. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the University of Sydney, Sydney, New South Wales, Australia. Please quote reference no. A1296/THES

University of Exeter
Department of Mathematics
LECTURER

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Mathematics, University of Exeter, Exeter EX4 4JF. Please quote reference no. A1296/THES

University of Warwick
LECTURESHIP IN ARTS EDUCATION (PRIMA)

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Arts Education, University of Warwick, Coventry CV4 7AL. Please quote reference no. A1296/THES

University College of North Wales
Coleg Prifysgol Gogledd Cymru Bangor
ADMINISTRATIVE ASSISTANT IN THE ACADEMIC OFFICE

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the University College of North Wales, Bangor, Gwynedd LL57 2DG. Please quote reference no. A1296/THES

University of Canterbury
New Zealand
SENIOR LECTURESHIP OR LECTURESHIP IN ECONOMICS

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Economics, University of Canterbury, Christchurch, New Zealand. Please quote reference no. A1296/THES

Massey University
Palmerston North
New Zealand
LECTURER/SENIOR LECTURER IN ACCOUNTING & FINANCE

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Massey University, Palmerston North, New Zealand. Please quote reference no. A1296/THES

University of Birmingham
Department of English Literature
TUTOR IN ENGLISH TO OVERSEAS STUDENTS

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of English Literature, University of Birmingham, Birmingham B15 2TT. Please quote reference no. A1296/THES

University of Wellington
New Zealand
SENIOR LECTURESHIP IN ECONOMICS

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the University of Wellington, Wellington, New Zealand. Please quote reference no. A1296/THES

University of Warwick
ADMINISTRATIVE ASSISTANT IN THE ACADEMIC OFFICE

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the University of Warwick, Coventry CV4 7AL. Please quote reference no. A1296/THES

University of Essex
INFORMATION OFFICER

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the University of Essex, Colchester CO4 3SQ. Please quote reference no. A1296/THES

Polytechnics

DEPARTMENT OF ESTATE MANAGEMENT AND QUANTITY SURVEYING

Applications are invited for the above post. The successful candidate will be expected to contribute to the department's research and teaching in these areas.

Further particulars and application forms are available from the Department of Estate Management and Quantity Surveying, University of Wales, Aberystwyth. Please quote reference no. A1296/THES

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Polytechnics continued


ROBERT GORDON'S INSTITUTE OF TECHNOLOGY, ABERDEEN
SCHOOL OF MECHANICAL AND OFFSHORE ENGINEERING
SENIOR LECTURER AND LECTURERS

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Applicants for the post of Senior Lecturer should be suitably qualified and experienced, and be capable of providing energetic and imaginative academic leadership in appropriate areas.

Salary scales (under review):
 Senior Lecturer £12,740-£17,280 per annum
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 Assistance with removal expenses.
 Further details from:
 The Personnel Department, Robert Gordon's Institute of Technology, Schoolhill, ABERDEEN AB9 1FR.
 Tel: (0224) 833611 Ext. 249

(74724)


ROBERT GORDON'S INSTITUTE OF TECHNOLOGY, ABERDEEN
SCHOOL OF HOTEL AND INSTITUTIONAL ADMINISTRATION
SENIOR LECTURER IN HOTEL AND CATERING MANAGEMENT STUDIES/INDUSTRIAL TUTOR

with appropriate academic and professional qualifications, and industrial as well as advanced level teaching experience, for duties as Senior Lecturer in Hotel and Catering Management Studies for Degree and Higher National Diploma Courses in Hotel, Catering and Institutional Management and to act as Industrial Tutor.

Salary scale: £13,710 - £17,280 per annum.
 Assistance with removal expenses.
 Further details from:
 The Personnel Department,
 Robert Gordon's Institute of Technology,
 Schoolhill, Aberdeen AB9 1FR Tel: (0224) 833611
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(71588)

HEAD OF DEPARTMENT BUILDING ADMINISTRATION

£18,264 - £20,166 pa
 Inclusive of London Allowance
 (Grade V - under review)

Applications are invited from suitably qualified candidates who possess qualities of leadership, resourcefulness and the appropriate academic and professional standing necessary for this key position.

The post presents an exciting opportunity for the right candidate to play a significant role in determining the pattern of education in building for the next generation.

The post will be available from 1.8.86 on the retirement of the current HOD.

Application forms and further details are available from the Personnel Department, South Bank Polytechnic, Borough Road, London SE1 8AA.
 Telephone: 01-225 9860 Ext. 2361.

Please quote REF: BAC.
 Closing date: 28th March 1986
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(71589)

PLEASE NOTE
 Copy Deadline for Issue 28th March 86
 is 10am Friday 21st March 86

Colleges and Institutes of Technology

DUDLEY METROPOLITAN BOROUGH
 (Equal Opportunity Employer)
STOURBRIDGE COLLEGE OF TECHNOLOGY & ART
HEAD OF THE FACULTY OF ART & DESIGN

£17,226 - £19,126 - for September - applicants should be suitably qualified and with experience of working with advanced level students in art and design together with proven experience in the requirements of the CNA. Person appointed will be expected to take one of the collegiate responsibilities shared by senior staff.

The College has full-time honours degree courses in Three Dimensional Design, Glass, and Fine Art, Higher Diploma and Diploma Courses in Graphic Design and Diploma Courses in General and Foundation Art and Design.

Application forms/details (enclosed SAE) from Principal's Secretary, Stourbridge College of Technology and Art, Hagley Road, Stourbridge, West Midlands, DY8 1QU, return by 4th April. (74728)

Secondary Education

Teacher of Engineering KENT

THE DUKE OF YORK'S ROYAL MILITARY SCHOOL, DOVER
 (INDEPENDENT BOARDING SCHOOL 470 BOYS 11-19)

Required for September 1986 a suitably qualified and experienced Mechanical and Production Engineer to teach on a BTEC National Diploma Course in Engineering with some additional Mathematics and Technology.

Candidates must be prepared to commit themselves fully to Boarding School life.

Salary: Burnham Scale 1 (currently £5442-£8280 (under review) dependent on experience) plus a very generous Boarding School Allowance. (A Scale 2 post attracting higher rates of pay may be available for a well qualified or experienced candidate).

Both married and single accommodation is available at a fair rent.

Application forms (returnable by 4 April 1986) are available from: Ministry of Defence, Area Civilian Staff Manager, Napier Barracks, Shorncliffe, Folkestone, Kent, CT20 3HB. Tel: Folkestone 39541 extn 2092. Please quote post reference DYMRS/786.

THE CIVIL SERVICE
 IS AN EQUAL OPPORTUNITIES EMPLOYER

(74717)

Colleges and Departments of Art

City of Newcastle upon Tyne Education Committee
COLLEGE OF ARTS & TECHNOLOGY
HEAD OF FOOD AND SERVICE INDUSTRIES

Grade VI £18,615-£20,511

This is a challenging position for an energetic and dynamic person with a proven record of experience and the capacity to manage and develop a major department in one of the country's largest colleges, located in the regional capital of the North East.

Application forms and further particulars for the above post are available from the Personnel Office, College of Arts and Technology, Maple Terrace, Newcastle upon Tyne, NE4 7SA, to be returned within fourteen days of the appearance of this advertisement.

The City Council is an Equal Opportunities Employer. Applicants are considered on the basis of their suitability for the post regardless of ethnic origin, sex, marital status or disability.

Colleges and Institutes of Higher Education

WESTMINSTER COLLEGE OXFORD
PRINCIPAL LECTURER

IN
 PRIMARY EDUCATION
 (Burnham FE Scale £14,013 - £17,618)

The College intends to appoint with effect from 1st September 1986, a suitably qualified person to take responsibility for its role in primary education, 5-12 age range. The successful candidate will lead a team of staff and teachers involved both with courses for ITT (B.Ed. and PGCE), and large, innovative INSET programme, including research studies.

Further details are available from the Principal's Secretary, Westminster College, North Hinksey, Oxford OX2 9HT, telephone number Oxford (0865) 247644. Final date for applications is Wednesday, 26th March 1986.

This is a second advertisement: all previous applications will be considered.

(7158)

EALING COLLEGE OF HIGHER EDUCATION
SENIOR LECTURER IN ACCOUNTING AND FINANCE

We require a well qualified graduate able to teach Management Accounting to our CNA under-graduate courses including Economics, Business Studies and in particular B.A. Accounting Studies. Salary: £12,996 to a possible maximum of £16,083 pa inclusive of London weighting. The post is tenable from 14th April 1986 or anytime until 1st September 1986.

Application form and further details from The Personnel Office, Ealing College of Higher Education, St Mary's Road, Ealing, London W5 5RF.
 Closing date: 26th March 1986.

County of Avon
BATH COLLEGE OF HIGHER EDUCATION
ASSISTANT DIRECTOR
 (Finance and Resources)

Salary scale: Vice Principal,
 Burnham Group VII £20,880-£21,335

The Governors seek to appoint by no later than 1 September 1986 an Assistant Director with a major responsibility for the forward planning and allocation of the College's annual recurrent grant and its capital allocations. The person appointed will hold a wide-ranging portfolio of duties which will include, inter alia, the use and management of buildings of all kinds.

Preference will be given, though not rigidly so, to graduates (or equivalent) who have obtained full ICMA/DIPFA qualifications and who have appropriate experience, not necessarily exclusively in education.

Knowledge of computer modelling and MIS development is also a requirement.

Further particulars and details of the method of application from The Director, Bath College of Higher Education, Newton Park, Newton St. Loe, Bath BA2 9BN (Tel: Bathford 3761). Closing date 11.4.86.

County of Avon is an equal opportunities employer.

(74713)

PLEASE MENTION
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 WHEN REPLYING TO
 ADVERTISEMENTS

Awards

THE EDGAR GRAHAM MEMORIAL PRIZE

The School of Oriental and African Studies (University of London) invites submissions from publishers and authors for this book prize, given every two years for a published work on modern agricultural and industrial development in Asia and/or Africa.

The prize of around £1000 will be next awarded in May 1988. Submissions should be made by 31 May 1986 of books in English published in the preceding two years.

Two copies of any work submitted should be sent to Miss Diana Mettas, Editorial Secretary, SOAS, Malet Street, London WC1E 7HP (tel. 01-637 2388).

(7158)

Awards continued

POSTGRADUATE AWARDS 1986/87

GRADUATES AND FINAL YEAR UNDERGRADUATES ARE YOU INTERESTED IN POSTGRADUATE STUDY? STUDENTSHIPS

The Department of Education for Northern Ireland (DENI) is offering a limited number of awards on a competitive basis for full-time research and research related to industry and for certain higher degree courses in HUMANITIES, INFORMATION TECHNOLOGY, NATURAL ENVIRONMENT, SCIENCE AND TECHNOLOGY AND SOCIAL SCIENCE.

Applicants should be ordinarily resident in Northern Ireland and hold or hope to obtain at least an upper second class honours degree (lower second class honours for science advanced courses only).

BURSARIES

The Department is also offering some awards on a competitive basis for certain full-time postgraduate certificate or diploma courses in HUMANITIES AND SOCIAL SCIENCE (excluding teacher training). Applicants should be ordinarily resident in Northern Ireland and hold or hope to obtain at least a pass degree or equivalent qualification.

Further information may be obtained from:
 Mrs. Jacqui Lanks, Department of Educational Studies, University of Surrey, Guildford, Surrey, GU2 8XH.
 Tel: Guildford (0462) 571281 ext. 3171 by 25 March 1986. (74722)

HOW TO APPLY
 For study in Northern Ireland apply to the university for both a place on the course and a grant application form. DO NOT send completed forms to DENI - return them to the university by its closing date.

For study outside Northern Ireland apply to the institution for a place on the course and ask DENI for a grant application form. RETURN THE COMPLETED APPLICATION FORM TO DENI BY ITS CLOSING DATE OF 1 MAY 1986. If necessary application forms should be sent in anticipation of degree results or firm offer of a place on the course.

Further details may be obtained from Postgraduate Awards Branch, Department of Education, Rathgael House, Rathgael Road, Bangor, Co. Down BT19 2ER. Telephone: Bangor 466311.

SPECIAL NOTE
 Students ordinarily resident in Northern Ireland are not eligible for postgraduate awards in the areas listed above from award making bodies in Great Britain.

Awards for postgraduate teacher training are NOT available under these schemes. (71587)

General Vacancies

Editor in Sociology

Routledge & Kegan Paul are looking for an acquisitions editor in Sociology and the allied Social Sciences to build their list in the late 80s and 90s. The selected candidate will be based in New Fetter Lane, but will be expected to travel in the UK and overseas, in pursuit of authors.

The successful applicant will have a good knowledge of the field, particularly of the exciting growing points. She/he will have a feeling for what the readers and buyers of books at the scholarly, student, and popular level want, and will be highly literate and numerate. Previous publishing experience is desirable, but not essential. An attractive salary and benefits in line with the best in the industry are available.

Please apply in writing to David Richards, Personnel Director, Associated Book Publishers (UK) Ltd, 11 New Fetter Lane, London EC4P 4EE, detailing your previous experience, salary, education, interests and abilities, and the way in which you would like to see the RKP list in the social sciences develop under your tutelage.

Routledge & Kegan Paul

Walker Art Gallery/Bridewell Studios

ARTIST IN RESIDENCE

Artists working in any medium and resident in Britain are invited to apply for the above appointment which will commence shortly for a period of 12 months.

The artist will receive a stipend of \$8000, studio and living accommodation at the Bridewell Studios in the centre of Liverpool, and exhibitions at the Walker Art Gallery at the beginning and end of the residency.

The residency is financed with the assistance of the Arts Council of Great Britain and the Granada Foundation.

For further information and an application form write to: Artist in Residence Scheme, Walker Art Gallery, William Brown Street, Liverpool L3 8EL. The closing date for applications is Friday 4th April 1986.

Merseyside County Council

Research and Studentships

UNIVERSITY OF SURREY
Department of Educational Studies
RESEARCH OPPORTUNITIES - OPEN DAY

The Department has a strong tradition of research and development work in teaching and learning in a wide variety of educational settings including Higher, Adult, Professional and Continuing Education, in Youth and Further Education, in Schools and in Computer Assisted Learning. It provides a programme of research training for its postgraduate students and has a postgraduate degree completion award.

An Open Day will be held at the Department on Thursday 10th April, 1986 to provide an opportunity for prospective research students to take part in an informal exchange of information regarding research interests with members of staff and current research students.

The Department currently has a number of students funded by Economic and Social Research Council (ESRC) studentships. The Department is keen to support suitable applications for Open Day research awards, which are for candidates who must satisfy the ordinary residence requirements of the ESRC. The awards are for two years, but may be extended to three years and are currently of £2,665 per annum. This may be increased through allowance for older students, dependants and expenses.

Further information may be obtained from:
 Mrs. Jacqui Lanks, Department of Educational Studies, University of Surrey, Guildford, Surrey, GU2 8XH.
 Tel: Guildford (0462) 571281 ext. 3171 by 25 March 1986. (74722)

University of Newcastle upon Tyne
THE STRANG STUDENTSHIP

Applications are invited from graduates, for research or research related to industry, for the Strang Studentship. The purpose of the Studentship is to enable the holder to undertake original research in any faculty except the Faculty of Medicine. The normal tenure of the Studentship is three years and the value will be maintained at the same level as the maintenance grant to holders of research council awards together with revision of fees.

Further particulars and application forms, which must be returned by 4 April 1986, may be obtained from the Registrar (Fellowship), The University, Newcastle upon Tyne, NE1 7RU. (01935) 812

The University of Sheffield
 Centre for Criminological and Socio-Legal Studies

RESEARCH ASSOCIATE

Applications are invited for a post of Research Associate for an ESRC funded project, from 1 June 1986, for 2 1/2 years, on Ethnic Minorities, Young People and the Criminal Justice System. Involvement in survey, statistical and observational work.

Research experience or a post in criminology or related field is desirable. Applications are especially invited from members of the ethnic minorities.

Salary will be on the range 1A for Research and Academic Staff, within the first 4 points of the scale (£9,275 (under review), according to age, qualifications and experience.

Further particulars are available from the Secretary, Centre for Criminological and Socio-Legal Studies, 433 Cromwell Road, Sheffield, S10 1BZ (Tel: 0744 78559, Ext. 6770), to whom applications, including a full curriculum vitae and the names and addresses of referees, should be sent by 27 March 1986. Please quote reference R.389/771. (01017) 812

Librarians

UNIVERSITY OF ABERDEEN
LIBRARIAN

Applications are invited for the post of LIBRARIAN which becomes vacant in July 1986.

Salary in the professional equivalent range, from £19,010 per annum.

Further particulars and application forms from The Secretary, The University, Regent Walk, Aberdeen AB9 1FX with whom applications (2 copies) should be lodged by 9 April 1986 (Ref EL027). (74711)

Colleges of Further Education

The Further Education Staff College
 Coombe Lodge, Blagdon, Bristol

The Further Education Staff College is expanding rapidly and now wishes to fill vacancies for

STAFF TUTORS

(Salary £13,398 - £17,739)

Appointments may be made to permanent posts, or short term contracts (3-5 years), or on secondment from present posts (2-3 years), starting on September 1st 1986. Expertise is sought in the following areas:

S76 Curriculum Management with experience of managing curriculum change in FHE, and of structuring, monitoring, and evaluating student learning (including methods of assessment).

S77 Organisation and Management Development in FHE. An understanding of the contribution of staff and management developing to OD is essential. Knowledge of Personnel Management such as job evaluation or industrial relations could be an advantage.

S78 Strategic Management with experience of policy making at the National level and/or major reorganisation at the local level. An appreciation of the professional and political dimensions of the FHE service is essential.

Please state the post and the reference number when applying for further details from The Registrar and Clerk to The Governors, The Further Education Staff College, Coombe Lodge, Blagdon, Bristol BS18 6RG. Telephone (0761 82503) to whom applications should be returned by 11th April 1986. (24714)

Courses


University of Sheffield
 Centre for Continuing Vocational Education
Degree of MEd in Continuing Education
 - a one-year full-time course

Course Director: Professor G E Chivers PhD

This course includes not only traditional elements of adult education eg. learning needs, research methodology and current UK provision, but new options in community education, women's adult education, adult education and the black communities, counselling project. New intake for October 1986.

Further information from Professor Chivers, Centre for Continuing Vocational Education, University of Sheffield, 85 Wilkinson Street, Sheffield S10 2JZ Tel 76555 ext 4823 (74727)


M. PHIL. COURSES IN LINGUISTICS AND APPLIED LINGUISTICS 1986-7

These courses, which can be taken full-time in one year (October to September) or part-time in two years, replace the graduate diploma courses in Linguistics and Applied Linguistics/Language Teaching. Language-specific components of the Applied Linguistics course will cater for English (as a foreign language), Irish, French, German, Spanish and Italian.

The closing date for applications is 30th April 1986.

Application forms and further particulars are available from:
 Graduate Studies Office
 Arts Building
 Trinity College
 Dublin 2 (71590)

University of York
M.A./M.Sc. IN MUSIC TECHNOLOGY

A new modular, one-year, full-time taught course, with an optional dissertation, MPhil, Musical Process, Music, Psycho-Acoustics, software for musical composition, technique of the digital music studio. Individual course units may also be taken at postgraduate level.

Relevant course synopses and applications forms available from the Graduate Office, University of York, Heslington, York YO1 5DD. (01904) 824

Research

Medical Research Council
 Medical Sociology Unit
 Glasgow

Applications are invited for a

SHORT-TERM NON-CLINICAL SCIENTIFIC POST

tenable for three years in the Medical Sociology Unit. Candidates of immediately postdoctoral or equivalent status will be preferred.

The appointee will work on a survey of everyday life and health among people in their homes in the Glasgow area. Experience with social surveys is essential, and knowledge of medical sociology and of middle life would be an advantage.

Recommutation will be at an appropriate point on the scales for University non-clinical scientific staff. The MRC (Medical Research Council) is a major employer. Further information and an application form may be obtained from: Dr. J. H. Sinclair, MRC Medical Sociology Unit, 6 Little France Road, Glasgow G12 8QQ (0357-3049), with whom applications - including a full CV and the names of professional referees - should be lodged by 28th March 1986.

Gloucestershire College of Arts and Technology
SENIOR LECTURER IN PERSONNEL MANAGEMENT AND BEHAVIOURAL SCIENCES

(£11,958 - £14,046 per annum) - Post No. 997Q050

The person appointed will be expected to make a major contribution towards the department's teaching of personnel management, particularly in respect of the IPM scheme. The post holder will also assume responsibility as the IPM Course Leader.

The successful candidate is likely to have had Personnel Management experience in industry/commerce; be qualified to MPhil or APM and be able to demonstrate their ability to effectively teach/train and lead a Course team.

The post will be effective from 1st September 1986. The closing date for applications is 24th March 1986. Interviews will be held in the week commencing 14th April 1986.

Further details and application forms available from: The Director, Gloucestershire College of Arts and Technology, Gloucester Campus, Gloucester GL1 2EW. S.A.E. please (01202) 811

Scholarships

Sports Science Scholarships

Applications are invited for two research studentships in the field of sports science. Relevant subject areas include medicine, physiology, biomechanics, biochemistry/nutrition, motor learning and social psychology. The studentships attract standard research council rates and are renewable from October 1986 for a period of two years, renewable for a third. Successful applicants are expected to register for a PhD.

Applications should be submitted by 31 May 1986 by academic departments on behalf of students.

For further particulars please contact the Research Unit, Sports Council, 18 Upper Woburn Place, London WC1H 0QR.



Overseas

UNIVERSITY OF CAPE TOWN

The Becker Fellowship for Research into Cancer in the Elderly

Applications are invited for the above Fellowship, commencing 1 July 1986, and involving research of a clinical or epidemiological nature into cancer in the elderly.

Requirements: a medical or science degree with appropriate experience. The exact nature of the project to be undertaken will be defined in consultation with the successful candidate. The Fellowship is for a year but may be renewable. The incumbent will be encouraged to use this opportunity to obtain an additional qualification.

Remuneration: negotiable to a maximum of R27 000 per annum.

Applicants should submit a full curriculum vitae and the names and addresses of three referees not later than 30 April 1986 to Professor P. de V. Meiring, Barteria Unit, Department of Medicine, Medical School, Observatory, 7925, Republic of South Africa. Further information may be obtained from the Registrar or from the Secretary, SA Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE.

The University's stand against apartheid and all racially discriminating legislation is on record. Information on this as well as on the University's policy not to discriminate in the appointment of staff or the admission of students on grounds of sex, race or religion is obtainable on request.

BWRA 0922

PROFESSOR OF ENTOMOLOGY

The University of Natal, Pietermaritzburg, invites applications from suitably qualified persons regardless of sex, race, colour or national origin for appointment to this post.

Preference will be given to applicants with experience in academic teaching, a sound reputation in entomological research and administrative experience. No restriction is placed on the field of interest of applicants but a commitment to the promotion of applied entomology as a departmental activity is required.

The appointment carries an attractive salary package. The commencing salary will be dependent on the qualifications and/or experience of the successful applicant.

Applications forms and further information are available from the South African Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE. Applications should be lodged with the Registrar no later than 25 April 1986. (74701)



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The Times Higher Education Supplement

Overseas continued

EUROPEAN UNIVERSITY INSTITUTE — FLORENCE

Professor of Law (A3/A4)

The Institute wishes to appoint to the above position with effect from January 1987 or as soon as possible thereafter, an established scholar of professional rank or qualifications, who should be prepared to undertake and supervise legal research of European concern in a multi-disciplinary environment; particular interest will attach to candidates with an established reputation in the comparative analysis of law. The appointment is for 3 years and is renewable.

Further particulars may be obtained from the Academic Service, European University Institute, Badia Fiesolana — I-50016 SAN DOMENICO DI FIESOLE (FI), to which applications should be submitted to arrive not later than 30 April 1986. (74719)

UNIVERSITY OF KUWAIT COLLEGE OF EDUCATION

Applications are invited for the following posts in the College of Education:

1. DEPARTMENT OF CURRICULUM AND INSTRUCTION
 - a. Curriculum and Kindergarten Teaching methods
 - b. Curriculum and Arabic Teaching Methods
 - c. Curriculum and Islamic Teaching Methods
 - d. Child Literature
 - e. Health Education
 - f. Home Economics
 - g. Mathematics Teaching Methods
 - h. Educational Technology
 - i. Art Education
 - j. Physical Education

2. DEPARTMENT OF EDUCATIONAL ADMINISTRATION
 - a. Educational Planning (Full Professor)
3. DEPARTMENT OF EDUCATIONAL PSYCHOLOGY
 - a. Educational Psychology (Full Professor)

4. DEPARTMENT OF FOUNDATIONS OF EDUCATION
 - a. Foundations of Education (minor: Kindergarten and Elementary Education)

All applicants must hold a PhD or its equivalent, and the language of instruction is ARABIC.

APPLICANTS: Applicants should write for application forms to the following: Cultural Affairs Office, Kuwait Embassy, 46 Queens Gate, London SW7 5BR.

Closing date for receipt of applications is 10th April 1986. (74702)

FU

BERLIN

Freie Universität Berlin
Fachbereich Philosophie und Sozialwissenschaften II
Institut für Judentum

Professor of Jewish Studies (C 3)

Applicants are invited for the position of a Professor of Jewish Studies (C 3) in the field of medieval and modern Judaism. The position is a tenured position and resembles an Associate Professorship in the US.

Applicants are asked to send in a curriculum vitae and a list of publications. Further particulars may be obtained from Freie Universität Berlin, Fachbereich Philosophie und Sozialwissenschaften II, Malvenstr. 8, D-1000 Berlin 45, where applications should arrive within six weeks. (71883)

Special Book Numbers

- | | |
|--------------|---|
| March | 21 English |
| April | 4 Psychology (I)
11 Law
18 Environmental Sciences (including Geography) I
25 Sociology (I) |
| May | 2 Chemistry
9 American Studies
16 Economics (I)
23 Biological Sciences (I)
30 Education (I) |
| June | 6 Engineering
13 University Presses (Copies to be distributed at The Association of American Presses meeting June 15-18) |
| Oct | 3 Computer Studies (II)
10 History (II)
17 Maths and Physics (II)
24 Politics
31 Psychology (II) |
| Nov | 7 Economics (II)
14 Biological Sciences (II)
21 Sociology (II)
28 Environmental Sciences (including Geography) II |
| Dec | 5 Education (II) |

Special Features

- | | |
|--------------|---|
| March | 21 Management Education—a feature which will also include reviews of business and management books. (Copies to be distributed at The Association of Teachers of Management Conference March 24-26). |
| June | 20 Women's Studies (Copies to be distributed at the Second International Feminist Book Fair June 22-27). |
| July | 4 Industry and Higher Education. |
| March | 14 |
| June | 25 Information Technology. |
| Nov | 7 |

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